# THE NATIONAL COUNCIL FOR TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING



## FEBRUARY 2023

## **OCCUPATIONAL STANDARDS**

# **OCCUPATION: AVIONICS MAINTENANCE ENGINEER**

## **LEVEL: NTA LEVEL 8**

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# ABBREVIATIONS

| AC   | Alternating Current                       |  |  |
|------|---|--|--|
| ADC  | Air Data Computer                         |  |  |
| ADF  | Automatic Direction Finder                |  |  |
| AFCS | Automatic Flight Control System           |  |  |
| AMM  | Aircraft Maintenance Manual               |  |  |
| АМО  | Approved Maintenance Organization         |  |  |
| AoA  | Angle of Attack                           |  |  |
| APU  | Auxiliary Power Unit                      |  |  |
| ASI  | Airspeed Indicator                        |  |  |
| ATC  | Air Traffic Control                       |  |  |
| АТО  | Approved Training Organization            |  |  |
| CBET | Competency Based Education and Training   |  |  |
| CSDU | Constant Speed Drive Unit                 |  |  |
| CVR  | Cockpit Voice Recorder                    |  |  |
| DC   | Direct Current                            |  |  |
| DME  | Distance Measuring Equipment              |  |  |
| EADI | Electronic Altitude Direction Indicator   |  |  |
| ECAM | Electronic Centralized Aircraft Monitor   |  |  |
| EEC  | Engine Electronic Control                 |  |  |
| EGT  | Exhaust Gas Temperature                   |  |  |
| EHSI | Electronic Horizontal Situation Indicator |  |  |

| EICAS   | Engine Indicating and Crew Alerting System |  |  |
|---|--|--|--|
| ELT   | Emergency Locator Transmitter              |  |  |
| EPR   | Engine Pressure Ratio                      |  |  |
| FDR   | Flight Data Recorder                       |  |  |
| FMC Flight Management Computer  |  |  |  |
| FMS Flight Management System  |  |  |  |
| GPS   | Global Positioning System                  |  |  |
| GPU   | Ground Power Unit                          |  |  |
| GPWS  | Ground Proximity Warning System            |  |  |
| HF High Frequency   |  |  |  |
| MCDU Multipurpose Control and Display Unit                                |  |  |  |
| <b>NACTVET</b> National Council for Technical and Vocational Education an |  |  |  |
| NOS National Occupational Standards                                       |  |  |  |
| OS Occupational Standards   |  |  |  |
| PFD   | Primary Flight Display                     |  |  |
| SELCAL  | Selective Calling                          |  |  |
| TAT   | Total Air Temperature                      |  |  |
| <b>TCAA</b> Tanzania Civil Aviation Authority                             |  |  |  |
| TCAS Traffic Collision Avoidance System                                   |  |  |  |
| TRU Transformer Rectifier Unit  |  |  |  |
| ТЕТ   | Technical Education and Training           |  |  |
|   |  |  |  |

**VHF** Very High Frequency

**VOR** VHF Omni-directional Range

# **GLOSSARY OF TERMS**

| Circumstantial<br>Knowledge:       | Detailed knowledge, which allows the decision-making in regard to different circumstances and cross cutting issues.  |  |  |  |
|------------------------------------|--|--|--|--|
| Competence:                        | The competence to use knowledge, understanding, practical, and<br>thinking skills to perform effectively to the workplace standards<br>required in employment.   |  |  |  |
| Competency:                        | A description of the ability one possesses when able to perform a given occupational task effectively and efficiently.   |  |  |  |
| Competency-based<br>Education:     | An instructional programme that derives its content from validated tasks<br>and bases assessment on the learner's performance.   |  |  |  |
| Curriculum:                        | A description or composite of statements about "what is to be learned"<br>by the trainee/student in a particular instructional programme; a product<br>that states the "intended learning outcomes".                                       |  |  |  |
| Educational/Training<br>Programme: | The complete curriculum and instruction (what and how) that is designed to prepare a person for employment in a job or other particular performance situation.   |  |  |  |
| Occupation:                        | A specific position requiring the performance of specific tasks -<br>essentially the same tasks are performed by all employees having the<br>same title. (Example: baker)  |  |  |  |
| Occupational Analysis:             | A process used to identify the tasks that are important to employees in any given occupation.  |  |  |  |
| Occupational Area:                 | This is a broad grouping of related jobs. (Example: catering service).   |  |  |  |
| Occupational<br>Standards:         | Specific requirements of competences for personnel in a particular occupational area, including knowledge and relevant attitudes. They also act as performance tools of assessment of the prescribed outcomes.                             |  |  |  |
| Occupational/Job<br>Analysis:      | A process used to identify the tasks that are important to employees in any given occupation.  |  |  |  |
| Performance Criteria:              | Indicate expected end results or outcomes in the form of evaluative statements.  |  |  |  |
| Skills:                            | The ability to perform occupational tasks with a high degree of<br>proficiency within a given occupation. Skill is conceived of as a<br>composite of three completely interdependent components: cognitive,<br>affective, and psychomotor. |  |  |  |

| Standards:                  | A set of statements, which, if proved true under working conditions<br>means that an individual is meeting an expected level and type of<br>performance.   |  |  |
|-----------------------------|--|--|--|
| Task Analysis:              | The process of analyzing each task to determine the steps, circumstantial knowledge, attitudes, performance criteria, tools and materials needed, as well as safety concerns required for the employees performing it.   |  |  |
| Task:                       | A work activity that has a definite beginning and ending, is observable<br>or measurable, consists of two or more definite steps, and leads to<br>products, service, or decisions.   |  |  |
| Underpinning<br>Knowledge:  | Crucial knowledge that an individual must acquire in order to demonstrate competences that are associated in performing a given task.  |  |  |
| Verification Process:       | The process of having experts review and confirm the importance of the task (competency) statements identified through occupational analysis. Other questions, such as the degree of task learning difficulty are also frequently asked. This process is also sometimes referred to as validation. |  |  |
| Occupational<br>Competence: | The application of knowledge and skills that consistently meet the standards required by the working conditions.   |  |  |

#### 1. INTRODUCTION

Technical Education and Training (TET) is one of the most important education sub-sectors in Tanzania, responsible for developing a skilled workforce to support the country's industrialization economic agenda. Tanzania's *Development Vision 2025* intends to raise the country's economy to a middle-income status, with a high level of human development. This requires a skilled workforce that is aligned with the needs of the public and private sectors of the economy. The National Council for Technical and Vocational Education and Training (NACTVET) has begun the job of drafting Occupational Standards (OS) that will eventually be adopted as National Occupational Standards (NOS) for use in the delivery of TET that meets the needs of the labour market and the country's economic agenda.

Occupational Standards (OS) are performance criteria that are matched with labour market demands. Each of them describes the functions, performance standards, and understanding or knowledge underpinning a given occupation. They combine skills, knowledge, and attitudes to describe best practice. They are useful tools for establishing job roles, personnel recruitment, supervision, and appraisal, as well as TET Standards. They are also helpful for benchmarking and harmonizing job qualifications on a national and international level. Standards, in general, provide a solid framework for high-quality TET that is labour market-relevant, current, and consistent in application across all public and private institutions.

However, it must be noted that Occupational Standards are different from Training /Education Standards. Occupational standards are defined in terms of activities performed by a person in a selected occupation (e.g., an electrical engineer designs electrical circuits, performs troubleshooting in electrical circuits, etc.), and are usually defined by Employers following procedures as agreed upon by all the stakeholders. On the other hand, Training and Education Standards are developed from the activities defined in the occupational standards, and they specify learning objectives to ensure that the necessary skills and knowledge are developed by a person to enable him/her to function at an agreed level in an occupation. Training and Education Standards are used to define curricula in training institutions. It is critical, however, to establish a direct link between the occupational standards for both of them to respond collaboratively to the demands of the labour market.

For the purpose of TET delivery, Tanzania has adopted the Competence Based Education and Training (CBET) approach. The CBET approach focuses on providing learners with the skills and knowledge required to meet the occupational standards. Occupational standards are thus the starting point for developing competency-based training (CBET) programmes. Therefore, it is quite pertinent for TET institutions to use the relevant occupational standards as a benchmark for formulating their curricula.

Occupational Standards are developed based on a given occupation's current and future demands. As a result, they serve as a means of bridging the gap between the worlds of employment and technical education and training.

The document explains how the occupational standards were developed, as well as the scope, the occupational profile in the form of DACUM charts, and the Occupational Standards.

#### 2. OCCUPATIONAL STANDARD DEVELOPMENT PROCESS

The process of developing these Occupational Standards involved both local and international expertise. The process began with an examination of major documents that guide Tanzanian skills development including the *10-year National Skills Development Strategy (2016-2026)*. NACTVET labour market reports were also used in the literature review to determine the skills demand in the Tanzanian labour market as a whole.

After the literature review, a team of experts in consultation with practitioners developed draft occupational standards. The draft document was used to develop an occupational profile for each occupation (DACUM Chart), which is attached as an **Appendix** to every Occupational Standard.

The occupational standards were validated during the stakeholders' forum held on 22nd and 23rd February 2024 at Morogoro. The information from the stakeholders' forum provides insight from the workplace, professional bodies, regulatory bodies and sector ministries regarding trends and changes in the profession, including how well graduates are prepared for working in the occupation.

# 3.0. THE SCOPE AND OVERVIEW OF THE OCCUPATION STANDARDS FOR AVIONICS MAINTENANCE ENGINEERS

These standards cover a broad range of duties and tasks that can be performed by an Avionics Maintenance Engineer. However, the occupational standards are not meant to replace individual job descriptions. Instead, they are to be used for guidance in defining skill levels and knowledge for the technician in specific settings or positions. The Avionics Maintenance Engineer may perform tasks in a number of key areas of the Occupational Standards, but not necessarily in all areas. For example, in large operations, other individuals may be employed or designated to perform specific tasks.

Avionics Maintenance Engineers work within Approved Maintenance Organisation (AMO) to maintain, repair and manage aircraft operating in the aviation transportation industry. The aviation transportation involves cargo and passenger aircraft; collectively referred to as commercial aircraft. Commercial aircraft are operated by well-trained and qualified personnel to transport goods and people between different locations worldwide. There is a wide range of aircraft types, varying in size, model and operating specifications. Avionics Maintenance Engineers play an important role in ensuring compliance with the airworthiness requirements stipulated by the Tanzania Civil Aviation Authority (TCAA). Generally, the Avionics Maintenance Engineer performs the following responsibilities:

- a) Analysis and isolation of faults in aircraft power generation, distribution and conversion systems
- b) Analysis and isolation of faults in aircraft lighting system maintenance
- c) Analysis and isolation of faults in aircraft instrument system maintenance
- d) Analysis and isolation of faults in aircraft radio communication and navigation systems
- e) Analysis and isolation of faults in aircraft electrical control and operating systems
- f) Analysis and isolation of faults in the aircraft radar systems
- g) Analysis and isolation of faults in the aircraft AFCS
- h) Aeronautical maintenance engineering management
- i) Fault diagnosis and system reliability analysis

The Occupational Standards have been clustered into NTA qualification levels i.e. NTA level 7 and 8.

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## 4.0. VALIDITY PERIOD

Due to the rapid development of technology, the validity period of occupational standards is 3-5 years. The review will proceed in the same manner as the one before it, with new occupational standards being developed based on current trends of the labour market.

## 5.0. OCCUPATIONAL STANDARDS

# 5.1 OCCUPATIONAL STANDARDS FOR AVIONICS MAINTENANCE ENGINEER -

## **NTA 8**

| OCCUPATION  | AVIONICS I<br>ENGINEER   | MAINTENANCE   | OCCUPATION<br>CODE   |                |  |
|---|--|---|--|----------------|--|
| DUTY TITLE  | CONDUCT ANA<br>ISOLATION OF F<br>AIRCRAFT RADA   | ALYSIS AND<br>AULTS IN THE<br>R SYSTEMS   | DUTY NO.   | 801            |  |
| TASK TITLE  | PERFORM MAN<br>AIRCRAFT RAI<br>MAINTENANCE   | AGEMENT OF<br>DAR SYSTEM  | TASK NO.   | 8011           |  |
| PERFORMANCE<br>CRITERIA   | <b>PERFORMANCE</b><br><b>CRITERIA</b> The person performing this task must be able to manage relevat personnel, promote work progress, coordinate and communicate with relevant departments and ensure quality control and implementation accordance with approved technical specifications and procedures.  |   |  |                |  |
| RANGE<br>STATEMENT  | <ul> <li>The task can be performed and the equipment and the equip</li></ul> | Formed in an AMO<br>tenance engineers of<br>tools to be used ind<br>nanagement offices<br>ocuments;<br>pment;<br>ials and consumab<br>equipment.  | under the supervisio<br>or release engineers.<br>clude:<br>;<br>les; | n of certified |  |
| PRACTICAL PERFO   | RMANCE   | UNDERPINNIN   | G KNOWLEDGE  |                |  |
| <ul> <li>PRACTICAL PERFORMANCE</li> <li>The person performing this task must be able to do the following: <ol> <li>Select the appropriate tools, equipment and safety devices;</li> <li>Assign suitable responsibilities and duties to relevant personnel;</li> <li>Develop the maintenance plans for aircraft radar systems;</li> <li>Organize the implementation of aircraft radar system maintenance;</li> </ol> </li> </ul> |  | <ul> <li>Detailed knowledge about:</li> <li>1.0 Methods</li> <li>The person performing this task must be able to explain how to:</li> <li>1.1 Develop maintenance plans;</li> <li>1.2 Organize the implementation of the maintenance plans;</li> <li>1.3 Implement maintenance management.</li> </ul> |  |                |  |
| 5. Communicate with and coordinate interactions between relevant departments;   |  | The person perforest  | orming this task must<br>ving principles:                            | st be able to  |  |

| 6. Promote the conduct and implementation of work;   | 2.1 Electronic principles and signal processing technologies;  |
|--|--|
| 7. Supervise the schedule and quality of work;   | 2.2 Preventative maintenance theories.   |
| 8. Evaluate results;   | 3.0 Theories   |
| <ul><li>9. Hold and organise relevant meetings;</li><li>10. Establish an effective incentive</li></ul> | The person performing this task must be able to explain the following:   |
| mechanism;   | 3.1 Effective management skills of radar   |
| 11. Control maintenance costs;   | 3.2 Maintenance management methods   |
| 12. Enhance team cohesion.   | 5.2 Maintenance management methods.  |
| 13. Observe health, occupational and   | 4.0 Essential Skills   |
| regulations.   | 4.1 Teamwork skills;   |
|  | 4.2 Communication skills;  |
|  | 4.3 Customer service competence;   |
|  | 4.4 Report writing competence;   |
|  | 4.5 Computer application competence.   |
| DESCRIPTION OF THE END<br>PRODUCT / SERVICE  | Relevant personnel are managed, work progress is<br>promoted, relevant departments are coordinated<br>and communicated with, and quality control and<br>implementation is ensured <i>in</i> accordance with<br>approved technical specifications and procedures. |
| CIRCUMSTANTIAL KNOWLEDGE   | Detailed knowledge about:  |
|  | 1. Project management;   |
|  | 2. Aviation safety;  |
|  | 3. Data analysis and recording;  |
|  | 4. Personnel management and training;  |
|  | 5. Environmental regulations.  |

| OCCUPATION   | AVIONICS MAINTENANCE OCCUPATION<br>ENGINEER CODE  |   |   |  |  |
|--|---|---|---|--|--|
| DUTY TITLE   | CONDUCT ANA<br>ISOLATION OF FA<br>AIRCRAFT RADAR S  | LYSIS AND<br>AULTS IN THE<br>YSTEMS   | DUTY NO.  | 801  |  |
| TASK TITLE   | CARRY OUT TES<br>AIRCRAFT MAIN RA   | TING OF THE<br>DAR SYSTEMS  | TASK NO.  | 8012   |  |
| PERFORMANCE<br>CRITERIA  | The person performing systems in accordance procedures.   | g this task must be a ce with approved  | able to test aircraft<br>technical specific                                     | main radar<br>cations and                    |  |
| RANGE<br>STATEMENT   | <ul> <li>The task can be performed in an AMO under the supervision of certified senior aircraft maintenance engineers or release engineers.</li> <li>The equipment and tools to be used include:</li> <li>Equipment and tools: <ol> <li>Personal protective equipment;</li> <li>Meteorological radar test equipment;</li> <li>Multimeters;</li> <li>Oscilloscopes;</li> <li>Radio altimeters;</li> <li>Toolboxes.</li> <li>Safety gear</li> </ol> </li> </ul> |   |   |  |  |
|  | <ol> <li>Locking wires;</li> <li>Straps and cleaner</li> </ol>  | \$  |   |  |  |
|  | EVIDENCE  | REQUIREMENT   |   |  |  |
| PRACTICAL PERF   | ORMANCE   | UNDERPINNING  | KNOWLEDGE   |  |  |
| <ul> <li>The person performing this task must be able to do the following:</li> <li>1. View task cards and maintenance instructions;</li> <li>2. Review all applicable airworthiness directives and service bulletins;</li> <li>3. Execute all applicable airworthiness directives and service bulletin instructions;</li> </ul> |   | Detailed knowledg<br>1.0 Methods<br>The person perform<br>explain how to:<br>1.1 Perform the<br>systems;<br>1.2 Perform the te<br>1.3 Use AMMs. | ge about:<br>ming this task must<br>tests of meteorolo<br>ests of radio altimet | t be able to<br>ogical radar<br>eer systems; |  |
| 4. Select appropria safety devices for   | te tools, equipment and or the task;  | 2.0 Principles  |   |  |  |

| 5.  | Implement the following component-   | The person performing this task must be able to         |
|-----|--|---|
|     | level tests:   | explain the following principles:                       |
|     | a. Meteorological radar receivers/transmitters;                              | 2.1 Working principles of meteorological radar systems; |
|     | b. Radar antenna housing;  | 2.2 Working principles of the Doppler systems;          |
|     | c. Meteorological radar  | 2.3 Working principles of radio altimeter               |
|     | d Meteorological radar   | systems;  |
|     | indicators/displays;   | 2.4 Tanzania civil aviation regulations.                |
|     | e. Waveguide;  |   |
|     | f. Doppler transmitters/receivers;   | 3.0 Theories  |
|     | g. Doppler antennae;   | The person performing this task must be able to         |
|     | h. Doppler indicators/displays;  | explain the following:                                  |
|     | <ol> <li>Doppier switches;</li> <li>Badio transmitters/receivers:</li> </ol> | 3.1 Basic methods of aircraft maintenance;              |
|     | k. Radio transmitting antennae:  | 3.2 Human factors in maintenance processes;             |
|     | 1. Radio altimeter indicators/displays.                                      | 3.3 The basic composition of meteorological             |
| 6.  | Implement the following system-level   | radar systems;  |
|     | tests:   | 3.4 The basic composition of the Doppler                |
|     | a. Meteorological radar systems;   | systems;  |
|     | b. Doppler systems;  | 3.5 The basic composition of radio altimeter            |
| 7   | Perform final tests and sign task cards:                                     | systems.  |
| 8.  | Clean the workplace, tools and   | 4.0 Essential Skills                                    |
|     | equipment;   | 4.1 Data analysis competence:                           |
| 9.  | Arrange and store the tools and  | 4.2 Engineering technical report writing                |
|     | equipment;   | competence;   |
| 10. | Submit test reports;   | 4.3 Computer skills;                                    |
| 11. | Submit task cards to the certification                                       | 4.4 Competence of using tools and equipment;            |
|     | engineer for certification and aircraft                                      | 4.5 Problem-solving competence;                         |
| 12  | Postora aircraft main radar systems to                                       | 4.6 Stress management;                                  |
| 12. | normal.  | 4.7 Teamwork;   |
| 13  | Observe health occupational and  | 4.8 Communication skills;                               |
| 10. | environmental safety rules and   | 4.9 Safety responsibility consciousness.                |
|     | regulations.   |   |
| DE  | SCRIPTION OF THE END   | Aircraft main radar systems are tested in               |
| PR  | ODUCT / SERVICE  | accordance with approved technical specifications       |
|     |  | and procedures.   |
| CIF | RCUMSTANTIAL KNOWLEDGE   | Detailed knowledge about:                               |
|     |  | 1. Project management;                                  |
|     |  | 2. Aviation safety;                                     |

| 3. | Data analysis and recording;       |
|----|------------------------------------|
| 4. | Personnel management and training; |
| 5. | Environmental regulations.         |

| OCCUPATION                | AVIONICS<br>ENGINEER  | MAINTENANCE                                    | OCCUPATION<br>CODE |     |  |
|---------------------------|---|--|--------------------|-----|--|
| DUTY TITLE                | CONDUCT ISOLATION OF AIRCRAFT RAT   | ANALYSIS AND<br>F FAULTS IN THE<br>DAR SYSTEMS | DUTY NO.           | 801 |  |
| TASK TITLE                | CONDUCTFAULTANALYSISTASK NO.8013AND ISOLATIONOFAIRCRAFTMAIN RADAR SYSTEMS8013   |  |                    |     |  |
| PERFORMANCE<br>CRITERIA   | The person performing this task must be able to conduct fault analysis<br>and isolation of the aircraft main radar systems in accordance with<br>approved technical specifications and procedures.  |  |                    |     |  |
| RANGE<br>STATEMENT        | <ul> <li>The task can be performed in an AMO under the supervision of certified senior aircraft maintenance engineers or release engineers.</li> <li>The equipment and tools to be used include:</li> <li>Equipment and tools: <ol> <li>Personal protective equipment;</li> <li>Meteorological radar testers;</li> <li>Radio altimeter testers;</li> <li>External power supplies;</li> <li>Computers;</li> <li>Multimeters;</li> <li>Oscilloscopes;</li> <li>Toolboxes.</li> <li>Safety gear</li> </ol> </li> </ul> |  |                    |     |  |
|                           | Materials:  |  |                    |     |  |
|                           | <ol> <li>Contact cleaners;</li> <li>Electrical jointing</li> </ol>  |  |                    |     |  |
|                           | EVIDENC   | E REQUIREMENT                                  |                    |     |  |
| PRACTICAL PERFOR          | MANCE   | UNDERPINNING K                                 | NOWLEDGE           |     |  |
| The person performing t   | his task must be  | Detailed knowledge                             | about:             |     |  |
| able to do the following: |   | 1.0 Methods                                    |                    |     |  |
| 1. Review aircraft statu  | is reports;   |  |                    |     |  |

| 2. | An                                    | alyze and isolate faults accor                    | ding   | The                                  | person performing this task must be able to      |
|----|---------------------------------------|---|--------|--------------------------------------|--|
|    | to the corresponding test reports and |   | expl   | ain how to:                          |  |
|    | troubleshooting manuals;              |   | 1.1    | Analyze the possible fault causes of |  |
| 3. | Sel                                   | ect appropriate tools, equip                      | ment   |                                      | meteorological radars;                           |
|    | and                                   | I safety devices for the task;                    |        | 1.2                                  | Isolate the faults of meteorological radar       |
| 4. | Pay                                   | v attention to health and sa                      | afety  |                                      | systems;   |
|    | whe                                   | en performing the task;                           |        | 1.3                                  | Analyze the possible fault causes of radio       |
| 5. | Per                                   | form component-level                              | fault  |                                      | altimeter systems;                               |
|    | ana                                   | lysis of the following:                           |        | 1.4                                  | Isolate faults of radio altimeters;              |
|    | a.                                    | Meteorological r                                  | adar   | 1.5                                  | Analyze the possible fault causes of the Doppler |
|    |                                       | receivers/transmitters;                           |        |                                      | systems;   |
|    | b.                                    | Radar antenna housing;                            |        | 1.6                                  | Isolate faults of the Doppler systems:           |
|    | c.                                    | Meteorological r                                  | adar   | 17                                   | Use AMMs   |
|    |                                       | antennae/scanners;                                |        | 1.7                                  |  |
|    | d.                                    | Meteorological r                                  | radar  | • •                                  | <b></b>  |
|    |                                       | indicators/displays;                              |        | 2.0                                  | Principles                                       |
|    | e.<br>f                               | Waveguide;  |        | The                                  | person performing this task must be able to      |
|    | 1.<br>a                               | Doppler transmitters/receive                      | ers;   | expl                                 | ain the following principles:                    |
|    | g.<br>h                               | Doppler antennae,<br>Doppler indicators/displays: |        | 2.1                                  | Working principles of meteorological radar       |
|    | п.<br>i                               | Doppler indicators/displays,                      | ,      |                                      | systems;   |
|    | i.                                    | Radio transmitters/receivers                      | :      | 2.2                                  | Working principles of the Doppler systems;       |
|    | k.                                    | Radio transmitting antennae                       | ;      | 2.3                                  | Working principles of radio altimeter systems;   |
|    | 1.                                    | Radio altin                                       | neter  | 2.4                                  | Tanzania civil aviation regulations.             |
|    | indicators/displays.                  |   |        |                                      |  |
| 6. | Per                                   | form system-level fault analys                    | sis of | 3.0                                  | Theories   |
|    | the                                   | following:  |        | The                                  | person performing this task must be able to      |
|    | a.                                    | Meteorological radar system                       | ns;    | expl                                 | ain the following:                               |
|    | b.                                    | Doppler systems;                                  |        | 3.1                                  | Basic methods of aircraft maintenance;           |
| 7  | с.                                    | Radio altimeter systems.                          |        | 3.2                                  | Human factors in maintenance processes;          |
| 1. | ISO                                   | iale possible faults in:                          |        | 3.3                                  | The basic composition of meteorological radar    |
|    | a.                                    | Meteorological r                                  | radar  |                                      | systems;   |
|    | h                                     | Reder antenna housing:                            |        | 3.4                                  | The basic composition of the Doppler systems:    |
|    | о.<br>С                               | Meteorological r                                  | adar   | 35                                   | The basic composition of radio altimeter         |
|    | C.                                    | antennae/scanners.                                | ada    | 5.5                                  | systems:   |
|    | d.                                    | Meteorological r                                  | adar   | 36                                   | The overhaul methods of the circuits:            |
|    |                                       | indicators/displays;                              |        | 5.0<br>2.7                           |  |
|    | e.                                    | Waveguide;  |        | 3.1                                  | components                                       |
|    | f.                                    | Doppler transmitters/receive                      | ers;   |                                      | components.                                      |
|    | g.                                    | Doppler antennae;                                 |        |                                      |  |
|    | h.                                    | Doppler indicators/displays;                      |        | 4.0                                  | Essential Skills                                 |
|    | i.                                    | Doppler switches;                                 |        | 4.1                                  | Fault analysis, prejudgment and prediction       |
|    | j.                                    | Radio transmitters/receivers                      | ;      |                                      | competence;                                      |

| k. Radio transmitting antennae;<br>l. Radio altimeter                            | 4.2 Engineering technical report writing competence;                             |  |
|--|--|--|
| indicators/displays.   | 4.3 Computer skills;   |  |
| 8. Perform final inspections and sign corresponding task cards;                  | 4.4 Competence of using tools and equipment;                                     |  |
| 9. Clean the workplace, tools and equipment;                                     | <ul><li>4.5 Problem-solving competence;</li><li>4.6 Stress management;</li></ul> |  |
| 10. Arrange and store the tools and  | 4.7 Teamwork;  |  |
| equipment;   | 4.8 Communication skills;  |  |
| 11. Submit task cards to the certification                                       | 4.9 Safety responsibility consciousness.   |  |
| engineer for certification and aircraft delivery for use;                        |  |  |
| 12. Restore the aircraft to its normal state.                                    |  |  |
| 13. Observe health, occupational and environmental safety rules and regulations. |  |  |
| DESCRIPTION OF THE END   | Faults in aircraft main radar systems are analysed and                           |  |
| PRODUCT / SERVICE  | isolated in accordance with approved technical                                   |  |
|  | specifications and procedures.   |  |
| CIRCUMSTANTIAL KNOWLEDGE   | Detailed knowledge about:  |  |
|  | 1. Project management;   |  |
|  | 2. Aviation safety;  |  |
|  | 3. Data analysis and recording;  |  |
|  | 4. Personnel management and training;  |  |
|  | 5. Environmental regulations.  |  |

| OCCUPATION              | AVIONICS MAINTENANCE<br>ENGINEER   | OCCUPATION<br>CODE                                   |                        |  |  |  |
|-------------------------|--|--|------------------------|--|--|--|
| DUTY TITLE              | CONDUCTANALYSISANDDUTY NO.801ISOLATION OF FAULTS IN THE<br>AIRCRAFT RADAR SYSTEMSISOLATIONISOLATIONISOLATION   |  |                        |  |  |  |
| TASK TITLE              | IMPLEMENT TESTING OF THE<br>AIRCRAFT SECONDARY RADAR<br>SYSTEMS  | TASK NO.   | 8014                   |  |  |  |
| PERFORMANCE<br>CRITERIA | The person performing this task must be able to test aircraft secondary radar systems in accordance with approved technical specifications and procedures.   |  |                        |  |  |  |
| RANGE STATEMENT         | <ul> <li>The task can be performed in an AM certified senior aircraft maintenance en The equipment and tools to be used ince Equipment and tools:</li> <li>1. Personal protective equipment;</li> <li>2. Computers with accessories;</li> <li>3. Electronics Technician's tool kit;</li> <li>4. Multimeters;</li> <li>5. Heat guns;</li> <li>6. Anti-static wrist straps;</li> <li>7. Soldering guns;</li> </ul> | 10 under the super<br>gineers or release er<br>lude: | vision of<br>ngineers. |  |  |  |
|                         | <ol> <li>8. Crimping tools and connector pick-up and delivery tools;</li> <li>9. ATC transponder test devices;</li> <li>10. TCAS test devices;</li> <li>11. DME test devices</li> <li>12. Safety gear</li> <li>13. Work bench.</li> </ol>  |  |                        |  |  |  |
|                         | <ul> <li>Materials:</li> <li>1. Contact cleaners;</li> <li>2. Contact enhancers;</li> <li>3. Electrical jointing;</li> <li>4. Wires;</li> <li>5. Welding materials;</li> <li>6. Heat shrinkable sleeves;</li> <li>7. Sealants;</li> <li>8. Solvent.</li> </ul>   |  |                        |  |  |  |

|  | EVIDEN   | CE REQUIREMENT  |  |
|--|--|---|--|
| PR   | ACTICAL PERFORMANCE  | UNDERPINNING KNOWLEDGE  |  |
| The  | e person performing this task must be                                | Detailed knowledge about:                                       |  |
| able   | e to do the following:   | 1.0 Methods   |  |
| 1.   | Select tools, equipment and safety gear;                             | The person performing this task must be able to explain how to: |  |
| 2.   | Observe health and safety  | 1.1 Perform DME system tests;                                   |  |
|  | regulations;   | 1.2 Perform ATC system tests;                                   |  |
| 3.   | Verify task cards and maintenance                                    | 1.3 Perform TCAS system tests;                                  |  |
| <ul><li>4. Review all applicable airworthiness directives and service bulletins;</li></ul> |  | 1.4 Perform GPWS system tests;                                  |  |
|  |  | 1.5 Use AMMs.   |  |
| 5.   | Execute all applicable airworthiness directives and service bulletin | 2.0 Principles  |  |
|  | instructions;  | The person performing this task must be able to                 |  |
| 6.   | Perform the following tests of                                       | explain the following principles:                               |  |
|  | secondary radar systems:   | 2.1 Working principles of DME systems;                          |  |
|  | a. Interrogators of distance   | 2.2 Working principle of ATC systems;                           |  |
|  | b. Control panels of distance  | 2.3 Working principles of TCAS systems;                         |  |
|  | measurement equipment;   | 2.4 Working principles of GPWS systems;                         |  |
|  | c. Indicators of distance  | 2.5 Tanzania civil aviation regulations.                        |  |
|  | measurement equipment;   | 3.0 Theories  |  |
|  | measurement equipment:   | The person performing this task must be able to                 |  |
|  | e. Air traffic control transponders;                                 | explain the following:  |  |
|  | f. ATC control panels;   | 3.1 Basic methods of aircraft maintenance;                      |  |
|  | g. Air traffic control antennae;                                     | 3.2 Human factors in maintenance processes;                     |  |
|  | i. TCAS control panels:  | 3.3 Basic composition of DME systems;                           |  |
|  | j. Displays/Indicators of air traffic                                | 3.4 Basic composition of ATC systems;                           |  |
|  | warning and collision avoidance                                      | 3.5 Basic composition of TCAS systems;                          |  |
|  | systems;   | 3.6 Basic composition of GPWS systems.                          |  |
|  | K. ICAS antennae;  |   |  |
|  | proximity warning systems-   | 4.0 Essential Skills  |  |
|  | GPWS;  | 4.1 Data analysis competence;                                   |  |
|  | m. GPWS alarm  | 4.2 Engineering technical report writing competence;            |  |
|  | indicators/displays.   | 4.3 Computer skills;  |  |
| 7.   | Implement the following system-                                      | 4.4 Competence of using tools and equipment;                    |  |
|  | level tests:   | 4.5 Problem-solving competence;                                 |  |
|  | a. DME systems;  | 4.6 Stress management;  |  |

| b. ATC systems;  | 4.7 Teamwork;  |  |
|--|--|--|
| c. TCAS systems;   | 4.8 Communication skills;  |  |
| d. GPWS systems.   | 4.9 Safety responsibility consciousness                          |  |
| 8. Perform final tests and sign task   | 1.9 Surety responsionity consciousness.                          |  |
| cards;   |  |  |
| <ol> <li>Submit task cards to the certification<br/>engineer for certification and aircraft<br/>delivery for use;</li> </ol> |  |  |
| 10. Restore the aircraft to its normal state   |  |  |
| 11.Clean tools, equipment and the workplace;   |  |  |
| 10. Store tools, equipment and safety gear;  |  |  |
| 11. Submit test reports;   |  |  |
| 12. Observe health, occupational and<br>environmental safety rules and<br>regulations.                                       |  |  |
| DESCRIPTION OF THE END   | Aircraft secondary radar systems are tested in                   |  |
| PRODUCT / SERVICE  | accordance with approved technical specifications an procedures. |  |
| CIRCUMSTANTIAL KNOWLEDGE   | Detailed knowledge about:  |  |
|  | 1. Project management;   |  |
|  | 2. Aviation safety;  |  |
|  | 3. Data analysis and recording;                                  |  |
|  | 4. Personnel management and training;                            |  |
|  | 5. Environmental regulations.                                    |  |

| OCCUPATION              | AVIONICS MAINTENANCE<br>ENGINEER   | OCCUPATION<br>CODE  |  |  |
|-------------------------|--|---|--|--|
| DUTY TITLE              | CONDUCTANALYSISANDISOLATIONOF FAULTSINAIRCRAFTRADARSYSTEMS   | DUTY NO. 801  |  |  |
| TASK TITLE              | PERFORM ANALYSIS AND<br>ISOLATION OF FAULTS IN THE<br>AIRCRAFT SECONDARY RADAR<br>SYSTEMS                                  | TASK NO. 8015   |  |  |
| PERFORMANCE<br>CRITERIA | The person performing this task must<br>and isolation of the aircraft secondary r<br>approved technical specifications and | be able to conduct fault analysis<br>adar systems in accordance with<br>procedures. |  |  |
| RANGE<br>STATEMENT      | The task can be performed in an AMO is senior aircraft maintenance engineers   | ander the supervision of certified or release engineers.                            |  |  |
|                         | The equipment and tools to be used in  | clude:  |  |  |
|                         | Equipment and tools:   |   |  |  |
|                         | <ol> <li>Personal protective equipment;</li> <li>Computers with accessories:</li> </ol>                                    |   |  |  |
|                         | <ol> <li>Computers with accessories,</li> <li>Electronics technician's tool kit:</li> </ol>                                |   |  |  |
|                         | <ol> <li>Multimeters;</li> </ol>   |   |  |  |
|                         | 5. Oscilloscopes;  |   |  |  |
|                         | 6. Heat guns;  |   |  |  |
|                         | 7. Anti-static wrist straps;   |   |  |  |
|                         | 8. Soldering guns;   |   |  |  |
|                         | 9. Crimping tools and connector pic  | k-up and delivery tools;  |  |  |
|                         | 10. ATC transponder test devices;  |   |  |  |
|                         | 11. TCAS test devices;   |   |  |  |
|                         | 12. DME test devices;  |   |  |  |
|                         | 13. Safety gear;   |   |  |  |
|                         | 14. Work bench.  |   |  |  |
|                         | Materials:   |   |  |  |
|                         | 1. Contact cleaners;   |   |  |  |
|                         | 2. Contact enhancers;  |   |  |  |
|                         | 3. Electrical jointing;  |   |  |  |
|                         | 4. Wires;  |   |  |  |
|                         | 5. Welding materials;  |   |  |  |
|                         | 6. Heat shrinkable sleeves;  |   |  |  |

|   |   | 7. Sealants;              |                |  |
|---|---|---------------------------|----------------|--|
|   |   | 8. Solvent.               |                |  |
|   |   | EVIDENC                   | E REC          | QUIREMENT  |
| PR  | ACTICAL PERFOR  | MANCE                     | UND            | ERPINNING KNOWLEDGE  |
| The                                       | e person performing t                                       | his task must be          | Detai          | iled knowledge about:  |
| abl                                       | e to do the following:                                      |                           | <b>1.0</b> I   | Methods  |
| 1.  | Select tools, equiprigear;                                  | nent and safety           | The period     | person performing this task must be able to in how to:                   |
| 2. Observe health and safety regulations; |   |                           | 1.1            | Analyze the possible fault causes of the DME                             |
| 3.  | Review aircraft statu                                       | s reports;                | S              | systems;   |
| 4.  | Determine the faults  | according to the          | 1.2 1          | Isolate DME system faults;   |
|   | corresponding test<br>troubleshooting man                   | reports and uals;         | 1.3            | Analyze the possible fault causes of the ATC systems;                    |
| 5.  | Perform compone   | ent-level fault           | 1.4 1          | Isolate ATC system faults;   |
|   | analysis of the follow<br>a. Interrogators                  | of distance               | 1.5            | Analyze the possible fault causes of the TCAS systems;                   |
|   | measurement ec  | uipment;                  | 1.6 I          | Isolated TCAS system faults;   |
|   | b. Control panel<br>measurement ec                          | s of distance<br>uipment; | 1.7 A          | Analyze the possible fault causes of the GPWS systems;                   |
|   | measurement ec  | uipment:                  | 1.8            | Isolate GPWS system faults;  |
|   | d. Antennae   | of distance               | 1.9            | Use AMMs.  |
|   | measurement ec  | uipment;                  |                |  |
|   | e. Air traffic contr  | ol transponders;          | 2.0            | Principles   |
|   | g. Air traffic control par                                  | ol antennae;              | The j<br>expla | person performing this task must be able to in the following principles: |
|   | i. TCAS computer  | anels:                    | 2.1            | Working principles of DME systems;                                       |
|   | j. Displays/Indicat   | tors of air traffic       | 2.2            | Working principle of ATC systems;  |
|   | warning and col   | lision avoidance          | 2.3            | Working principles of TCAS systems;                                      |
|   | systems;  |                           | 2.4            | Working principles of GPWS systems;                                      |
|   | K. ICAS antennae  | with ground               | 2.5            | Tanzania civil aviation regulations.                                     |
|   | proximity was GPWS;   | rning systems-            | 3.0            | Theories   |
|   | m. GPWS alarm inc   | dicators/displays.        | The j          | person performing this task must be able to                              |
| 6.  | Perform system-leve   | l fault analysis of       | expla          | in the following:  |
|   | the following:  |                           | 3.1            | Basic methods of aircraft maintenance;                                   |
|   | a. DME systems;   |                           | 3.2 1          | Human factors in maintenance processes;                                  |
|   | b. ATC systems;   |                           | 3.3 1          | Basic composition of DME systems;  |
|   | <ul><li>c. TCAS systems;</li><li>d. GPWS systems.</li></ul> |                           | 3.4 1          | Basic composition of ATC systems;  |

| 7. Isolate possible faults in:                |   | 3.5  | Basic composition of TCAS systems;             |
|---|---|------|--|
| a. Interrogators of distance                  |   | 3.6  | Basic composition of GPWS systems;             |
|   | measurement equipment;                  | 3.7  | The overhaul methods of the circuits;          |
|   | b. Control panels of distance           | 3.8  | The methods of disassembling and assembling    |
|   | measurement equipment;                  |      | components.                                    |
|   | c. Indicators of distance               |      | 1  |
|   | measurement equipment;                  | 40   | Fssential Skills                               |
|   | d. Antennae of distance                 | 4 1  | Easting projudement and prediction             |
|   | Air traffic control transponders:       | 4.1  | competence:                                    |
|   | f. ATC control panels:                  | 12   | Engineering technical report writing           |
|   | g. Air traffic control antennae;        | 4.2  | competence:                                    |
|   | h. Computers with ground                | 12   | Computer skills:                               |
|   | proximity warning systems;              | 4.5  | Computer skills;                               |
|   | i. GPWS alarm indicators/displays;      | 4.4  | Competence of using tools and equipment;       |
|   | j. TCAS computers;                      | 4.5  | Problem-solving competence;                    |
|   | k. TCAS control panels;                 | 4.6  | Stress management;                             |
|   | 1. Displays/Indicators of air traffic   | 4.7  | Teamwork;                                      |
|   | systems.                                | 4.8  | Communication skills;                          |
|   | m. TCAS antennae.                       | 4.9  | Safety responsibility consciousness.           |
| 8   | Perform final inspections and sign      |      |  |
| 0.  | corresponding task cards:               |      |  |
| 9   | Submit task cards to the certification  |      |  |
|   | engineer for certification and aircraft |      |  |
|   | delivery for use;                       |      |  |
| 10. Restore the aircraft to its normal state. |   |      |  |
| 11.Clean tools, equipment and the             |   |      |  |
| workplace,                                    |   |      |  |
| 12.   | Store tools, equipment and safety       |      |  |
|   | gear;                                   |      |  |
| 13.   | Observe health, occupational and        |      |  |
|   | environmental safety rules and          |      |  |
|   | regulations.                            |      |  |
| DE  | SCRIPTION OF THE END                    | Fau  | lts in aircraft secondary radar systems are    |
| PR  | ODUCT / SERVICE                         | ana  | lysed and isolated in accordance with approved |
|   |   | tech | nnical specifications and procedures.          |
| CIE   | RCUMSTANTIAL KNOWLEDGE                  | Det  | ailed knowledge about:                         |
|   |   | 1.   | Project management;                            |
|   |   | 2.   | Aviation safety;                               |
|   |   | 3.   | Data analysis and recording;                   |
|   |   | 4.   | Personnel management and training;             |

|  | 5 | 5. Environmental regulations. |
|--|---|-------------------------------|
|--|---|-------------------------------|

| OCCUPATION              | AVIONICS MAINTENANCE<br>ENGINEER  | OCCUPATION<br>CODE  |            |  |  |  |
|-------------------------|---|---|------------|--|--|--|
| DUTY TITLE              | CONDUCTANALYSISANDDUTY NO.801ISOLATION OF FAULTS IN THE<br>AIRCRAFT RADAR SYSTEMSISOLATION OF FAULTS IN THE<br>AIRCRAFT RADAR SYSTEMS   |   |            |  |  |  |
| TASK TITLE              | CARRY OUT COMPREHENSIVE<br>FAULT DETECTION AND<br>DIAGNOSIS OF AIRCRAFT<br>RADAR SYSTEMS  | TASK NO. 8016   |            |  |  |  |
| PERFORMANCE<br>CRITERIA | The person performing this task must be<br>fault detection and diagnosis of aircra<br>with approved technical specifications  | e able to conduct comprehension<br>aft radar systems in accordar<br>and procedures. | ive<br>nce |  |  |  |
| RANGE<br>STATEMENT      | <ul> <li>The task can be performed in an AMO of senior aircraft maintenance engineers.</li> <li>The equipment and tools to be used in Equipment and tools: <ol> <li>Personal protective equipment;</li> <li>Computers with accessories;</li> <li>Electronics technician's tool kit;</li> <li>Multimeters;</li> <li>Oscilloscopes;</li> <li>Heat guns;</li> <li>Anti-static wrist straps;</li> <li>Soldering guns;</li> <li>Crimping tools and connector pice</li> <li>ATC transponder test devices;</li> <li>TCAS test devices;</li> <li>DME test devices;</li> <li>Safety gear;</li> </ol> </li> <li>Materials:</li> </ul> | k-up and delivery tools;  | led        |  |  |  |
|                         | <ol> <li>Contact cleaners;</li> <li>Contact enhancers;</li> <li>Electrical jointing;</li> <li>Wires;</li> <li>Welding materials;</li> <li>Heat shrinkable sleeves;</li> </ol>   |   |            |  |  |  |

|   | 7. Sealants;  |             |  |  |  |
|---|---|-------------|--|--|--|
|   | 8. Solvent.   |             |  |  |  |
|   | EVIDENCE REQUIREMENT                                      |             |  |  |  |
| PR  | ACTICAL PERFORMANCE                                       | UNI         | DERPINNING KNOWLEDGE   |  |  |
| The   | e person performing this task must be                     | Deta        | ailed knowledge about:   |  |  |
| able  | e to do the following:                                    | 1.0         | Methods  |  |  |
| 1.  | Select tools, equipment and safety gear;                  | The<br>expl | person performing this task must be able to ain how to:                  |  |  |
| 2. Observe health and safety regulations;     |   | 1.1         | Perform fault detection and diagnosis of aircraft                        |  |  |
| 3. Review aircraft status reports;            |   |             | radar system components;   |  |  |
| 4.  | Determine faults according to test reports, AMMs, etc.;   | 1.2         | Perform fault detection and diagnosis of aircraft radar system circuits; |  |  |
| 5. Trace and diagnose faults in the           |   | 1.3         | Use AMMs.  |  |  |
|   | following system components:                              |             |  |  |  |
|   | a. Meteorological radar systems;                          | 2.0         | Principles   |  |  |
| b. Doppler systems;                           |   | The         | person performing this task must be able to                              |  |  |
|   | d DME systems:  | expl        | ain the following principles:  |  |  |
|   | e. ATC systems;   | 2.1         | Working principles of aircraft radar systems;                            |  |  |
|   | f. TCAS systems;  | 2.2         | Working principles of the Doppler systems;                               |  |  |
|   | g. GPWS systems.  | 2.3         | Working principles of radio altimeter systems;                           |  |  |
| 6.  | Trace and diagnose faults in the                          | 2.4         | Working principles of DME systems;                                       |  |  |
|   | following system circuits:                                | 2.5         | Working principle of ATC systems;  |  |  |
|   | a. Meteorological radar systems;                          | 2.6         | Working principles of TCAS systems;                                      |  |  |
|   | b. Doppler systems;                                       | 2.7         | Working principles of GPWS systems;                                      |  |  |
| c. Radio altimeter systems;<br>d DME systems: |   | 2.8         | Tanzania civil aviation regulations.                                     |  |  |
|   | e. ATC systems;   |             |  |  |  |
|   | f. TCAS systems;  | 3.0         | Theories   |  |  |
|   | g. GPWS systems.  | The         | person performing this task must be able to                              |  |  |
| 7.  | Perform final inspections and sign                        | expl        | ain the following:   |  |  |
|   | corresponding task cards;                                 | 3.1         | Basic methods of aircraft maintenance;                                   |  |  |
| 8.  | Submit task cards to the certification                    | 3.2         | Human factors in maintenance processes;                                  |  |  |
|   | engineer for certification and aircraft delivery for use: | 3.3         | Analysis methods of fault trees;   |  |  |
| Q   | Restore the aircraft to its normal state                  | 3.4         | Components of aircraft radar systems;                                    |  |  |
| ).<br>10                                      | Clean tools equipment and the                             | 3.5         | The overhaul methods of the circuits;                                    |  |  |
| 10.   | workplace;  | 3.6         | The methods of disassembling and assembling components.                  |  |  |
| 9.  | Store tools, equipment and safety                         |             | -  |  |  |
|   | gear;   | 4.0         | Essential Skills   |  |  |

| 10. Observe health, occupational and               | 4.1 Fault analysis, prejudgment and prediction  |
|--|---|
| regulations.                                       | <ul><li>4.2 Engineering technical report writing competence;</li></ul>  |
|  | 4.3 Computer skills;  |
|  | 4.4 Competence of using tools and equipment;  |
|  | 4.5 Problem-solving competence;   |
|  | 4.6 Stress management;  |
|  | 4.7 Teamwork;   |
|  | 4.8 Communication skills;   |
|  | 4.9 Safety responsibility consciousness.  |
| DESCRIPTION OF THE END<br>PRODUCT / SERVICE        | Faults in aircraft radar systems are comprehensively detected and diagnosed in accordance with approved technical specifications and procedures |
| CIRCUMSTANTIAL KNOWLEDGE Detailed knowledge about: |   |
|  | 1. Project management;  |
|  | 2. Aviation safety;   |
|  | 3. Data analysis and recording;   |
|  | 4. Personnel management and training;   |
|  | 5. Environmental regulations.   |

| OCCUPATION  | AVIONICS<br>ENGINEER   | MAINTENANCE   | OCCUPATION<br>CODE                             |                        |  |  |  |
|---|--|---|--|------------------------|--|--|--|
| DUTY TITLE  | PERFORM<br>ISOLATION O<br>AIRCRAFT AFC   | ANALYSIS AND<br>F FAULTS IN THE<br>S  | DUTY NO.                                       | 802                    |  |  |  |
| TASK TITLE  | PERFORM MA<br>AIRCRAFT AFC   | NAGEMENT OF THE<br>S MAINTENANCE  | TASK NO.                                       | 8021                   |  |  |  |
| PERFORMANCE<br>CRITERIA   | The person perfor<br>the aircraft AFCS<br>specifications and   | rming this task must be ab<br>maintenance in accord<br>d procedures.  | le to perform mana<br>ance with approved       | gement of<br>technical |  |  |  |
| RANGE<br>STATEMENT  | <ul> <li>The task can be p<br/>senior aircraft ma</li> <li>The equipment an</li> <li>Maintenance</li> <li>Fitter's com</li> <li>Electrician'</li> <li>Computer wi</li> <li>Aviation ma</li> <li>Transportati</li> <li>Safety gear</li> <li>Work bench</li> </ul> | performed in an AMO under<br>aintenance engineers or re-<br>nd tools to be used include<br>e documents;<br>plete tool kit;<br>s complete tool kit;<br>th accessories;<br>tterials and consumables;<br>on equipment; | er the supervision o<br>lease engineers.<br>e: | f certified            |  |  |  |
|   | EVIDEN   | CE REQUIREMENT  |  |                        |  |  |  |
| PRACTICAL PERI  | FORMANCE   | UNDERPINNING KNO  | OWLEDGE  |                        |  |  |  |
| The person performi   | ng this task must be   | Detailed knowledge abo  | out:   |                        |  |  |  |
| 1. Select tools, equipped and the follow                              | uipment and safety   | The person performing explain how to:   | this task must b                               | e able to              |  |  |  |
| <ol> <li>Observe hea regulations;</li> <li>Assign responsi</li> </ol> | hth and safety   | <ol> <li>1.1 Develop maintenan</li> <li>1.2 Organize the implet</li> </ol>  | ce plans;<br>mentation of the ma               | intenance              |  |  |  |
| maintenance pe  | csonnel;   | 1.3 Implement mainten   | ance management.                               |                        |  |  |  |
| 4. Develop main   | tenance plan for   | nance plan for  |  |                        |  |  |  |
| 5. Organize mainte  | enance team;   | <b>2.0 Principles</b>   | this task must h                               | e able to              |  |  |  |
| 6. Establish  | interdepartmental  | explain the following pr  | inciples:                                      |                        |  |  |  |
| communication   | mechanism;   | 2.1 Principles of preven  | ntative maintenance                            | ;                      |  |  |  |
| 7. Promote workp  | nance personnel::  | 2.2 Principles of troubl  | eshooting and repai                            | ir;                    |  |  |  |
|   |  | 2.3 Principles of techni  | cal standards and pr                           | ocedures;              |  |  |  |

| 8.  | Supervise the schedule and quality of maintenance work; | 2.4         | Principles of data analysis and monitoring;<br>Principles of spare parts management   |  |  |
|---|---|-------------|---|--|--|
| 9.  | Evaluate results;                                       | 2.5         | Therpies of spare parts management.   |  |  |
| 10.   | Organize toolbox meetings;                              | 3.0         | Theories  |  |  |
| 11.   | Establish an effective incentive mechanism;             | The<br>expl | person performing this task must be able to<br>ain the following:   |  |  |
| 12.   | Prepare maintenance budget;                             | 3.1         | Team management theories and communication  |  |  |
| 13.   | control movement of tools and equipment.                | 3.2         | skills;   |  |  |
| 14  | Manage parts and material stock                         |             | Humon recourses monogement:   |  |  |
| 1   | levels;<br>Enhance team spirit.                         | 5.5<br>2.4  | Principle of aeropautical maintenance:  |  |  |
| 15.   |   | 3.4         | Maintenance plans and scheduled maintenance:  |  |  |
| 16.   | Observe health, occupational and                        | 3.5         | Aviation regulations and standards:   |  |  |
|   | environmental safety rules and                          | 3.7         | Maintenance technologies and methods.   |  |  |
|   | regulations.  |             | Ũ   |  |  |
|   |   | 4.0         | Essential Skills  |  |  |
|   |   | 4.1         | Teamwork skills;  |  |  |
|   |   | 4.2         | Communication skills;   |  |  |
|   |   | 4.3         | Customer service competence;  |  |  |
|   |   | 4.4         | Report writing competence;  |  |  |
|   |   | 4.5         | Computer application competence.  |  |  |
| DESCRIPTION OF THE END<br>PRODUCT / SERVICE |   |             | Management of the aircraft AFCS maintenance is<br>conducted in accordance with approved technical<br>specifications and procedures. |  |  |
| CIR   | CUMSTANTIAL KNOWLEDGE                                   | Det         | ailed knowledge about:  |  |  |
|   |   | 1.          | Safe disposal of materials;   |  |  |
|   |   | 2.          | Safety operation of equipment and tools;  |  |  |
|   |   |             |   |  |  |

| OCCUPATION              | AVIONICS MAINTENANCE<br>ENGINEER   | OCCUPATION<br>CODE   |      |  |  |  |
|-------------------------|--|--|------|--|--|--|
| DUTY TITLE              | PERFORM ANALYSIS AND<br>ISOLATION OF FAULTS IN THE<br>AIRCRAFT AFCS  | DUTY NO.   | 802  |  |  |  |
| TASK TITLE              | IMPLEMENTPERFORMANCETESTSOFTHEAUTOMATICPILOTING/FLIGHTGUIDANCE SYSTEMSVINCONNANT   | TASK NO.   | 8022 |  |  |  |
| PERFORMANCE<br>CRITERIA | The person performing this task must be able to perform regular maintenance on the aircraft autopilot guidance computers and controller systems in accordance with approved technical specifications and procedures.   |  |      |  |  |  |
| RANGE<br>STATEMENT      | The task can be performed in an AMO und<br>senior aircraft maintenance engineers or<br>The equipment and tools to be used inclu<br><b>Equipment and tools:</b> <ol> <li>Personal protective equipment;</li> <li>Test equipment of flight control con</li> <li>Test equipment of flight guidance of</li> <li>Fitter's complete tool kit;</li> <li>Electrician's complete tool kit;</li> <li>Multimeters;</li> <li>Oscilloscopes;</li> <li>Heat guns;</li> <li>Anti-static wrist straps;</li> <li>Soldering guns;</li> <li>Crimping tools and connector pick-</li> <li>Safety gear;</li> <li>Work bench</li> </ol> <li>Materials: <ol> <li>Contact cleaners;</li> <li>Electrical jointing;</li> <li>Wires;</li> <li>Welding materials;</li> </ol></li> | intenance on the aircraft autopilot guidance computers and con<br>tems in accordance with approved technical specification<br>recedures.<br>e task can be performed in an AMO under the supervision of ce<br>aircraft maintenance engineers or release engineers.<br>e equipment and tools to be used include:<br><b>uipment and tools:</b><br>Personal protective equipment;<br>Test equipment of flight control computers;<br>Test equipment of flight guidance computers;<br>Fitter's complete tool kit;<br>Electrician's complete tool kit;<br>Multimeters;<br>Oscilloscopes;<br>Heat guns;<br>Anti-static wrist straps;<br>Soldering guns;<br>Crimping tools and connector pick-up and delivery tools;<br>Safety gear;<br>Work bench<br><b>aterials:</b><br>Contact cleaners;<br>Electrical jointing;<br>Wirze: |      |  |  |  |
|                         | <ol> <li>Heat shrinkable sleeves.</li> </ol>   |  |      |  |  |  |

|          | EVIDENCE REQUIREMENT  |   |  |  |  |  |
|----------|---|---|--|--|--|--|
| PR       | ACTICAL PERFORMANCE   | UNDERPINNING KNOWLEDGE  |  |  |  |  |
| The      | e person performing this task must be able  | Detailed knowledge about:   |  |  |  |  |
| to c     | lo the following:   | 1.0 Methods   |  |  |  |  |
| 1.<br>2. | Select tools, equipment and safety gear;<br>Observe health and safety regulations;                                  | The person performing this task must be able to explain how to:   |  |  |  |  |
| 3.       | Verify task cards and maintenance instructions;   | 1.1 Inspect, test and replace the flight guidance computer systems;   |  |  |  |  |
| 4.       | Review all applicable airworthiness directives and service bulletins;   | 1.2 Inspect and replace DFCS mode control panels/indicators;  |  |  |  |  |
| 5.       | Execute all applicable airworthiness directives and service bulletin  | 1.3 Inspect and replace AFCS interface/interlocking devices;  |  |  |  |  |
| 6.       | <ul><li>instructions;</li><li>Perform inspections on the following:</li><li>a. Flight guidance computers;</li></ul> | 1.4 Inspect, test and replace the components of autopilot connection and disconnection systems;                             |  |  |  |  |
|          | b. DFCS mode control panels/indicators;   | <ul><li>1.5 Inspect and replace the autopilot switches;</li><li>1.6 Inspect and replace the tilt thumb and roller</li></ul> |  |  |  |  |
|          | c. Automatic flight status announcers;  | controlling devices;  |  |  |  |  |
|          | d. Flight guidance controller/mode<br>selector switches;  | 1.7 Use AMMs.   |  |  |  |  |
|          | devices;  | 2.0 Principles  |  |  |  |  |
|          | f. Components of autopilot<br>connection and disconnection  | The person performing this task must be able to explain the following principles:   |  |  |  |  |
|          | systems;<br>g. Autopilot switches:  | 2.1 Test flows of autopilot/flight guidance   |  |  |  |  |
|          | h. Tilt thumb and roller controllers.   | 2.2 Working principles of autopilot/flight  |  |  |  |  |
| 7.       | Perform tests on the following:   | guidance systems;   |  |  |  |  |
|          | <ul><li>a. Flight guidance /AP computers;</li><li>b. Automatic driving interface</li></ul>                          | 2.3 Tanzania civil aviation regulations.  |  |  |  |  |
|          | systems;  | 3.0 Theories  |  |  |  |  |
|          | c. Flight guidance controllers;   | The person performing this task must be able to   |  |  |  |  |
|          | e. Autopilot connection and   | explain the following:  |  |  |  |  |
|          | disconnection systems;  | 3.1 Basic methods of aircraft maintenance;  |  |  |  |  |
|          | f. Tests of bus controllers and bus   | 3.2 Human factors in maintenance processes;   |  |  |  |  |
|          | information transmission.   | 3.3 Basic composition of autopilot/flight   |  |  |  |  |
| 8.       | Replace the defective components in the following autopilot flight guidance and                                     | guidance systems;   |  |  |  |  |
|          | controller systems according to<br>airworthiness requirements   | systems.  |  |  |  |  |
|          | a Flight guidance computers:  |   |  |  |  |  |

|      | b.   | DFCS                    |                                 | mode         | сс         | ontrol                               | 4.0  | Essential Skills                               |
|------|------|-------------------------|---------------------------------|--------------|------------|--------------------------------------|------|--|
|      |      | panels/i                | indica                          | tors;        |            |                                      | 4.1  | Data analysis competence:                      |
|      | c.   | Automa                  | matic flight status announcers; |              | 4.2        | Engineering technical report writing |      |  |
|      | d.   | Flight                  | guida                           | ance co      | ontroller/ | mode                                 |      | competence;                                    |
|      | 0    | selector                | r swite                         | ches;        | o/intorlo  | alzina                               | 4.3  | Computer skills;                               |
|      | e.   | devices                 |                                 | merrac       |            | cking                                | 4.4  | Competence of using tools and equipment;       |
|      | f.   | Autopil                 | ,<br>lot                        | connec       | ction      | and                                  | 4.5  | Problem-solving competence;                    |
|      |      | disconn                 | nection                         | n swi        | itches     | and                                  | 4.6  | Stress management;                             |
|      |      | autopilo                | ot swi                          | tches;       |            |                                      | 4.7  | Teamwork;                                      |
|      | g.   | Tilt thu                | mb ar                           | id roller of | controlle  | ers.                                 | 4.8  | Communication skills;                          |
| 9.   | Perf | form fina               | al insp                         | pections     | and sign   | ı task                               | 4.9  | Safety responsibility consciousness.           |
| 10   | carc | 18;                     |                                 |              |            |                                      |      |  |
| 10.  | Sub  | mit task                | c card                          | ls to the    | e certific | cation                               |      |  |
|      | deli | verv for                | use:                            | Incation     | anu an     | ICIAII                               |      |  |
| 11.  | Rest | ore the a               | ircraft                         | t to its nc  | ormal sta  | te                                   |      |  |
| 12.0 | Clea | n tools e               | anipu                           | nent and t   | he workr   | place                                |      |  |
| 13   | Stor | re tools                | equin                           | ment and     | d safety   | gear.                                |      |  |
| 10.  | and  | • • • • • • • • • • • • | equip                           | literit un   | a saroty   | geau,                                |      |  |
| 14.  | Ob   | oserve                  | health                          | i, occur     | oational   | and                                  |      |  |
|      | env  | ironmen                 | tal                             | safety       | rules      | and                                  |      |  |
|      | reg  | ulations.               |                                 |              |            |                                      |      |  |
|      |      |                         |                                 |              |            |                                      |      |  |
|      |      |                         |                                 |              |            |                                      |      |  |
| DES  | SCR  | IPTION                  | j <b>(</b>                      | OF T         | <b>HE</b>  | END                                  | Perf | ormance tests of aircraft autopilot guidance   |
| PRO  | ODU  | CT / SE                 | RVIC                            | <b>E</b>     |            |                                      | com  | puters and controller systems are conducted in |
|      |      |                         |                                 |              |            |                                      | acco | ordance with approved technical specifications |
|      |      |                         |                                 |              |            |                                      | and  | procedures.                                    |
| CIR  | RCUI | MSTAN                   | TIAL                            | KNOW         | LEDGE      | C                                    | Deta | ailed knowledge about:                         |
|      |      |                         |                                 |              |            |                                      | 1.   | Safety operation of equipment and tools;       |
|      |      |                         |                                 |              |            |                                      | 2.   | Occupational safety and health.                |

| OCCUPATION              | AVIONICS MAINTENANCE<br>ENGINEER   | OCCUPATION<br>CODE                               |        |  |
|-------------------------|--|--|--------|--|
| DUTY TITLE              | PERFORM ANALYSIS AND<br>ISOLATION OF FAULTS IN THE<br>AIRCRAFT AFCS  | <b>DUTY NO.</b> 802                              | 2      |  |
| TASK TITLE              | CONDUCT FAULT ANALYSIS<br>AND ISOLATION OF AIRCRAFT<br>AUTOMATIC PILOTING/FLIGHT<br>GUIDANCE SYSTEMS   | <b>TASK NO.</b> 802                              | 23     |  |
| PERFORMANCE<br>CRITERIA | The person performing this task must be able to conduct fault analysis<br>and isolation operations of aircraft autopilot guidance computers and<br>controller systems in accordance with approved technical<br>specifications and procedures.  |  |        |  |
| KANGE STATEMENT         | <ul> <li>The task can be performed in an A certified senior aircraft maintenance er The equipment and tools to be used in Equipment and tools:</li> <li>Personal protective equipment;</li> <li>Test equipment of flight control of</li> <li>Test equipment of flight guidance</li> <li>Voltage-stabilized power supplie</li> <li>Electronics technician's complet</li> <li>Computer with accessories;</li> <li>Multimeters;</li> <li>Oscilloscopes;</li> <li>Heat guns;</li> <li>Anti-static wrist straps;</li> <li>Soldering guns;</li> <li>Crimping tools and connector pic</li> <li>Torque wrenches;</li> <li>Safety gear;</li> <li>Work bench.</li> </ul> | computers;<br>e computers;<br>s;<br>te tool kit; | heers. |  |
|                         | <ul> <li>Materials:</li> <li>1. Contact cleaners;</li> <li>2. Contact enhancers;</li> <li>3. Electrical jointing;</li> <li>4. Wires;</li> </ul>  |  |        |  |

|      |  | 5. Welding mat            | erials   | ;;   |  |  |
|------|--|---------------------------|--|--|--|--|
|      |  | 6. Heat shrinka           | ble sl   | eeves.   |  |  |
|      |  | EVIDENCE                  | REQ  | UIREMENT   |  |  |
| PR   | PRACTICAL PERFORMANCE                              |                           |  | DERPINNING KNOWLEDGE   |  |  |
| The  | e person performing thi                            | s task must be able       | Deta   | ailed knowledge about:   |  |  |
| to c | do the following:                                  |                           | 1.0  | Methods  |  |  |
| 1.   | Select tools, equipme                              | ent and safety gear;      | The  | The person performing this task must be able to                              |  |  |
| 2.   | Observe health and sa                              | afetyregulations;         | expl   | explain how to:  |  |  |
| 3.   | Review aircraft status                             | s reports;                | 1.1  | Inspect and test the autopilot/flight guidance                               |  |  |
| 4.   | Determine the faults                               | according to the          | 1.0  | systems;   |  |  |
| 5    | corresponding trouble                              | eshooting manuals;        | 1.2  | Analyze possible fault causes of autopilot/flight guidance systems:          |  |  |
| 5.   | Flight guidenee                                    | s of the following:       | 13   | Isolate autopilot/flight guidance system                                     |  |  |
|      | b. Automatic di                                    | riving interface          | 1.5  | components or circuit faults;  |  |  |
|      | systems;   | 0                         | 1.4  | Use AMMs.  |  |  |
|      | c. Flight guidance                                 | controllers;              |  |  |  |  |
|      | d. Advisory display                                | y displays;               | 2.0  | Principles   |  |  |
|      | e. Autopilot connection and disconnection systems. |                           |  | person performing this task must be able to<br>ain the following principles: |  |  |
| 6.   | Perform the follo                                  | wing component            | 2.1  | Test flows of autopilot/flight guidance                                      |  |  |
|      | inspections:                                       |                           |  | systems;   |  |  |
|      | b. DFCS m  | computers;<br>ode control | 2.2  | Working principles of autopilot/flight                                       |  |  |
|      | panels/indicator                                   | s;                        |  | guidance systems;  |  |  |
|      | c. Automatic                                       | flight status             | 2.3  | Tanzania civil aviation regulations.   |  |  |
|      | announcers;  | . 11 / 1                  | 2.0  |  |  |  |
|      | d. Flight guidance                                 | e controller/mode         | 3.0<br>T   | Theories   |  |  |
|      | e. AFCS inte                                       | s,<br>erface/interlocking | The person performing this task must be able to explain the following: |  |  |  |
|      | devices;   |                           | 3.1  | Basic methods of aircraft maintenance;                                       |  |  |
|      | f. Autopilot con                                   | onnection and             | 3.2  | Human factors in maintenance processes;                                      |  |  |
| 7    | Perform tests on the t                             | following items           | 3.3  | Basic composition of autopilot/flight guidance                               |  |  |
| /.   | a Flight guidance                                  | /AP computers:            |  | systems;   |  |  |
|      | b. Automatic di                                    | riving interface          | 3.4  | Test methods of autopilot/flight guidance                                    |  |  |
|      | systems;   | C                         |  | systems;   |  |  |
|      | c. Flight guidance                                 | controllers;              | 3.5  | Analysis methods of fault trees;   |  |  |
|      | d. Advisory display                                | ys;                       | 3.6  | The overhaul methods of the circuits;  |  |  |
|      | e. Autopilot co                                    | onnection and             | 3.7  | The methods of disassembling and assembling                                  |  |  |
|      | f. Tests of bus co                                 | ontrollers and bus        |  | components.  |  |  |
|      | information tran                                   | smission.                 |  |  |  |  |

| 8. I  | solate possible component and circuit   | 4.0 | Essential Skills  |
|---|---|-----|---|
| f   | faults in the following:  | 4.1 | Fault analysis competence;  |
| a<br>t                                      | <ul><li>a. Flight guidance computers;</li><li>b. DFCS mode control</li></ul>                          | 4.2 | Engineering technical report writing competence;  |
|   | panels/indicators;  | 4.3 | Computer skills;  |
|   | 2. Automatic flight status  | 4.4 | Competence of using tools and equipment;  |
|   | d. Flight guidance controller/mode  | 4.5 | Problem-solving competence;   |
|   | selector switches;  | 4.6 | Stress management;  |
| e   | e. AFCS interface/interlocking  | 4.7 | Teamwork;   |
|   | devices;  | 4.8 | Communication skills;   |
| 1   | Autopilot connection and disconnection systems:   | 4.9 | Safety responsibility consciousness.  |
| ç   | z. Autopilot and vaw damper   |     |   |
|   | switches;   |     |   |
| ł   | n. Tilt thumb and roller controllers.   |     |   |
| 9. H  | Perform final inspections and sign corresponding trouble tickets;                                     |     |   |
| 10. S                                       | Submit trouble tickets to the certification engineer for certification and aircraft delivery for use; |     |   |
| 11.   | Restore the aircraft to its normal state.   |     |   |
| 12.<br>V                                    | Clean tools, equipment and the workplace;   |     |   |
| 13. S                                       | Store tools equipment and safety gear;<br>and   |     |   |
| 14.   | Observe health, occupational and environmental safety rules and regulations.                          |     |   |
| DESCRIPTION OF THE END<br>PRODUCT / SERVICE |   |     | Its in aircraft autopilot guidance computers and<br>troller systems are analysed and isolated in<br>ordance with approved technical specifications<br>procedures. |
| CIRC  | CUMSTANTIAL KNOWLEDGE   | Det | ailed knowledge about:  |
|   |   | 1.  | Safety operation of equipment and tools;  |
|   |   | 2.  | Occupational safety and health.   |
| OCCUPATION  | AVIONICS<br>ENGINEER  | MAINTENANCE | OCCUPATION<br>CODE |  |
|---|---|-------------|--------------------|--|
| DUTY TITLE  | PERFORMANALYSISANDDUTY NO.802ISOLATION OF FAULTS IN THEAIRCRAFT AFCS  |             |                    |  |
| TASK TITLE  | CARRY OUT PERFORMANCE<br>TESTS OF THE AIRCRAFT<br>AUTOTHROTTLE SYSTEMSTASK NO.8024  |             |                    |  |
| PERFORMANCE<br>CRITERIA   | The person performing this task must be able to conduct performance<br>tests of aircraft autothrottle systems in accordance with approved<br>technical specifications and procedures.   |             |                    |  |
| RANGE STATEMENT   | <ul> <li>The task can be performed in an AMO under the supervision of certified senior aircraft maintenance engineers or release engineers.</li> <li>The equipment and tools to be used include:</li> <li>Equipment and tools: <ol> <li>Personal protective equipment;</li> <li>Test equipment of autothrottle computers;</li> <li>Computer with accessories;</li> <li>Electronics technician's complete tool kit;</li> <li>Multimeters;</li> <li>Oscilloscopes;</li> <li>Heat guns;</li> <li>Anti-static wrist straps;</li> <li>Soldering guns;</li> <li>Crimping tools and connector pick-up and delivery tools;</li> </ol> </li> </ul> |             |                    |  |
|   | Materials:1. Contact cleaners;2. Contact enhancers;3. Electrical jointing;4. Wires;5. Welding materials;6. Heat shrinkable sleeves.   |             |                    |  |
| EVIDENCE       REQUIREMENT         PRACTICAL PERFORMANCE       UNDERPINNING KNOWLEDGE |   |             |                    |  |

| The person performing this task must be able  | Detailed knowledge about:   |
|---|---|
|   | 1.0 Methods   |
| <ol> <li>Select tools, equipment and safety gear</li> <li>Observe health and safety regulations;</li> </ol> | The person performing this task must be able to explain how to:                   |
| 3. Verify task cards and maintenance instructions;  | 1.1 Inspect, test and replace the autothrottle computers;                         |
| 4. Review all applicable airworthinese directives and service bulletins;                                    | 1.2 Inspect and replace the control panels of autothrottle systems;               |
| 5. Execute all applicable airworthiness directives and service bulleting                                    | 1.3 Inspect and replace the autothrottle servo motors;                            |
| <ul><li>instructions;</li><li>6. Perform inspections on the following:</li></ul>                            | 1.4 Inspect, test and replace the engine electronic control unit;                 |
| <ul><li>a. Autothrottle computers;</li><li>b. Control panels of autothrottle</li></ul>                      | 1.5 Perform tests of bus controllers and bus information transmission;            |
| systems;<br>c. Components of autothrottle   | 1.6 Use AMMs.   |
| indicating systems;<br>d. Engine electronic control unit:   | 2.0 Principles  |
| e. Components of autothrottle<br>connection and disconnection   | The person performing this task must be able to explain the following principles: |
| systems;  | 2.1 Test flows of autothrottle systems;   |
| f. Autothrottle servo motors.   | 2.2 Working principles of autothrottle systems;                                   |
| 7. Perform operational and functional tests on the following items:   | 2.3 Tanzania civil aviation regulations.  |
| a. Autothrottle computers;  | 3.0 Theories  |
| b. Control panels of autothrottle<br>systems;   | The person performing this task must be able to explain the following:            |
| c. Autothrottle indicating systems;   | 3.1 Basic methods of aircraft maintenance;  |
| e. Autothrottle connection and  | 3.2 Human factors in maintenance processes;                                       |
| disconnection systems;  | 3.3 Basic composition of autothrottle systems;                                    |
| f. Tests of bus controllers and bus information transmission.   | 3.4 Test methods of autothrottle systems.   |
| 8. Replace the defective autothrottle system  | 4.0 Essential Skills  |
| components according to airworthiness   | 4.1 Data analysis competence;   |
| Autothrottle computers:   | 4.2 Engineering technical report writing  |
| b. Control panels of autothrottle   | competence;   |
| systems;  | 4.3 Computer skills;  |
| c. Components of autothrottle   | 4.4 Competence of using tools and equipment;                                      |
| indicating systems;   | 4.5 Problem-solving competence;   |
| a. Engine electronic control unit;  | 4.6 Stress management;  |

| e. Components of autothrottle  | 4.7 Teamwork;   |
|--|---|
| connection and disconnection   | 4.8 Communication skills;   |
| systems;   | 4.9 Safety responsibility consciousness.  |
| f. Autothrottle servo motors.  |   |
| 9. Perform final inspections and sign task cards;  |   |
| 10. Submit task cards to the certification engineer for certification and aircraft delivery for use;     |   |
| 11. Restore the aircraft to its normal state.  |   |
| 12. Clean tools, equipment and the workplace;  |   |
| 13. Store tools equipment and safety gear; and   |   |
| <ol> <li>Observe health, occupational and<br/>environmental safety rules and<br/>regulations.</li> </ol> |   |
| DESCRIPTION OF THE END<br>PRODUCT / SERVICE  | Performance tests of aircraft autothrottle systems<br>are conducted in accordance with approved<br>technical specifications and procedures. |
| CIRCUMSTANTIAL KNOWLEDGE   | Detailed knowledge about:   |
|  | 1. Safety operation of equipment and tools;   |
|  | 2. Occupational safety and health.  |

| OCCUPATION              | AVIONICS<br>ENGINEER  | MAINTENANCE                  | OCCUPATIO<br>N CODE |     |
|-------------------------|---|------------------------------|---------------------|-----|
| DUTY TITLE              | PERFORM A<br>ISOLATION OF<br>AIRCRAFT AFCS  | NALYSIS AND<br>FAULTS IN THE | DUTY NO.            | 802 |
| TASK TITLE              | PERFORM FAULT ANALYSIS AND<br>ISOLATION OF AIRCRAFT<br>AUTOTHROTTLE SYSTEMSTASK NO.8025   |                              |                     |     |
| PERFORMANCE<br>CRITERIA | The person performing this task must be able to conduct analysis and isolation of faults in aircraft autothrottle systems in accordance with approved technical specifications and procedures.  |                              |                     |     |
| RANGE STATEMENT         | <ul> <li>The task can be performed in an AMO under the supervision of certified senior aircraft maintenance engineers or release engineers.</li> <li>The equipment and tools to be used include:</li> <li>Equipment and tools: <ol> <li>Personal protective equipment;</li> <li>Test equipment of autothrottle computers;</li> <li>Oscilloscopes;</li> <li>Voltage-stabilized power supplies;</li> <li>Computer with accessories;</li> <li>Electronics technician's complete tool kit;</li> <li>Multimeters;</li> </ol> </li> </ul> |                              |                     |     |
|                         | <ul> <li>9. Anti-static wrist straps;</li> <li>10. Soldering guns;</li> <li>11. Crimping tools and connector pick-up and delivery tools;</li> <li>12. Safety gear;</li> <li>13. Work bench.</li> </ul>  |                              |                     |     |
|                         | <ol> <li>Contact cleaners;</li> <li>Contact enhancers;</li> <li>Electrical jointing;</li> <li>Wires;</li> <li>Welding materials;</li> <li>Heat shrinkable sleeves.</li> </ol>   |                              |                     |     |
|                         | EVIDENCE REQUIREMENT  |                              |                     |     |
| PRACTICAL PERFORM       | MANCE   | UNDERPINNING I               | KNOWLEDGE           |     |

| The person performing this task must be able |   | Detailed knowledge about:   |
|--|---|---|
| to do the following:                         |   | 1.0 Methods   |
| 1. Select tools, equipment and safety gear;  |   | The person performing this task must be able to                                   |
| 2.   | Observe health and safetyregulations;   | explain how to:   |
| 3.   | Review aircraft status reports;   | 1.1 Inspect and test the autothrottle systems;                                    |
| 4.   | Determine the faults according to the corresponding troubleshooting manuals;  | 1.2 Analyze the possible fault causes of the autothrottle systems;                |
| 5.   | Perform fault analysis of the following:  | 1.3 Isolate components or circuit faults of                                       |
|  | <ul><li>a. Autothrottle computers;</li><li>b. Control panels of autothrottle systems;</li></ul>                       | 1.4 Use AMMs.   |
|  | c. Autothrottle indicating systems;   | 2.0 Principles  |
|  | <ul> <li>d. Engine electronic control unit;</li> <li>e. Autothrottle connection and disconnection systems.</li> </ul> | The person performing this task must be able to explain the following principles: |
| 6  | Perform the following component   | 2.1 Test flows of autothrottle systems;   |
| 0.   | inspections:  | 2.2 Working principles of autothrottle systems;                                   |
|  | a. Autothrottle computers;  | 2.3 Tanzania civil aviation regulations.  |
|  | b. Control panels of autothrottle   |   |
|  | systems;  | 3.0 Theories  |
|  | c. Components of autothrottle   | The person performing this task must be able to                                   |
|  | Indicating systems;   | explain the following:  |
|  | e. Components of autothrottle   | 3.1 Basic methods of aircraft maintenance;  |
|  | connection and disconnection  | 3.2 Human factors in maintenance processes;                                       |
|  | systems;  | 3.3 Basic composition of autothrottle systems;                                    |
|  | g. Autothrottle servo motors.   | 3.4 Test methods of autothrottle systems;   |
| 7.   | Perform operational and functional tests  | 3.5 Analysis methods of fault trees;  |
|  | on the following items:   | 3.6 Methods of measurement and overhaul of circuits:                              |
|  | b. Control panels of autothrottle   | 3.7 The methods of disassembling and  |
|  | systems;  | assembling components.  |
|  | c. Autothrottle indicating systems;   |   |
|  | d. Engine electronic control unit;  | 4.0 Essential Skills  |
|  | e. Autothrottle connection and  | 4.1 Fault analysis competence;  |
|  | f. Tests of bus controllers and bus information transmission.   | 4.2 Engineering technical report writing competence;                              |
| 8.   | Isolate possible component and circuit  | 4.3 Computer skills;  |
|  | faults in the following:  | 4.4 Competence of using tools and equipment;                                      |
|  | a. Autothrottle computers;  | 4.5 Problem-solving competence;   |
|  | b. Control panels of autothrottle systems;  | 4.6 Stress management;  |

| c. Components of autothrottle  | 4.7 Teamwork;  |
|--|--|
| indicating systems;  | 4.8 Communication skills;  |
| <ul> <li>d. Engine electronic control unit;</li> <li>e. Components of autothrottle connection and disconnection systems;</li> <li>h. Autothrottle servo motors.</li> <li>9. Perform final inspections and sign corresponding trouble tickets:</li> </ul> | 4.9 Safety responsibility consciousness.   |
| <ol> <li>Submit appropriate trouble tickets to the certification engineer for certification and aircraft delivery for use;</li> </ol>  |  |
| 11. Restore the aircraft to its normal state.  |  |
| 12. Clean tools, equipment and the workplace;  |  |
| 13. Store tools equipment and safety gear; and   |  |
| 14. Observe health, occupational and<br>environmental safety rules and<br>regulations.   |  |
| <b>DESCRIPTION OF THE END PRODUCT</b> / SERVICE  | Faults in aircraft autothrottle systems are analysed<br>and isolated in accordance with approved<br>technical specifications and procedures. |
| CIRCUMSTANTIAL KNOWLEDGE   | Detailed knowledge about:  |
|  | <ol> <li>Safety operation of equipment and tools;</li> <li>Occupational safety and health.</li> </ol>  |

| OCCUPATION              | AVIONICS MAINTENANCE<br>ENGINEER   | OCCUPATION<br>CODE  |                           |  |
|-------------------------|--|---|---------------------------|--|
| DUTY TITLE              | PERFORM ANALYSIS AND<br>ISOLATION OF FAULTS IN<br>THE AIRCRAFT AFCS  | DUTY NO.  | 802                       |  |
| TASK TITLE              | IMPLEMENT PERFORMANCE<br>TESTS OF THE AIRCRAFT<br>FLIGHT STABILITY<br>AUGMENTATION SYSTEMS                               | TASK NO.  | 8026                      |  |
| PERFORMANCE<br>CRITERIA | The person performing this task must<br>tests of aircraft flight stability augr<br>with approved technical specification | st be able to conduct per<br>nentation systems in a<br>ons and procedures.                  | erformance<br>accordance  |  |
| RANGE STATEMENT         | The task can be performed in an certified senior aircraft maintenanc<br>The equipment and tools to be used               | AMO under the supe<br>e engineers or release<br>include:                                    | ervision of<br>engineers. |  |
|                         | Equipment and tools:   |   |                           |  |
|                         | 1. Personal protective equipment   | •   |                           |  |
|                         | 2. Test equipment of yaw damping   | ng computers;   |                           |  |
|                         | 3. Test equipment of flight stabil   | ity augmentation com  | puters;                   |  |
|                         | 4. Computer with accessories;  | Computer with accessories;  |                           |  |
|                         | 5. Electronics technician's comp   | lete tool kit;  |                           |  |
|                         | 6. Multimeters;  |   |                           |  |
|                         | 7. Heat guns;  |   |                           |  |
|                         | 8. Anti-static wrist straps;   | Anti-static wrist straps;   |                           |  |
|                         | Welding guns;  |   |                           |  |
|                         | 10. Crimping tools and connector   | <ol> <li>Crimping tools and connector pick-up and delivery tools;</li> <li>Tools</li> </ol> |                           |  |
|                         | 11. Torque wrenches;<br>12. Safety gear:   |   |                           |  |
|                         | 12. Safety gear,<br>13. Work bench   |   |                           |  |
|                         |  |   |                           |  |
|                         | Materials:   |   |                           |  |
|                         | 1. Contact cleaners;   |   |                           |  |
|                         | 2. Contact enhancers;  |   |                           |  |
|                         | 3. Electrical jointing;  |   |                           |  |
|                         | 4. Wires;  |   |                           |  |
|                         | 5. Welding materials;  |   |                           |  |
|                         | 6. Heat shrinkable sleeves;  |   |                           |  |
|                         | 7. Air filters.  |   |                           |  |

| EVIDENCE REQUIREMENT  |  |  |  |
|---|--|--|--|
| PRACTICAL PERFORMANCE   | UNDERPINNING KNOWLEDGE   |  |  |
| The person performing this task must be                                     | Detailed knowledge about:  |  |  |
| able to do the following:   | 1.0 Methods  |  |  |
| 1. Select tools, equipment and safety gear;                                 | The person performing this task must be able to explain how to:                    |  |  |
| 2. Observe health and safety regulations;                                   | 1.1 Inspect, test and replace the yaw damping                                      |  |  |
| 3. Verify task cards and maintenance  | computers/flight augmentation computers;   |  |  |
| 4. Review all applicable airworthiness                                      | 1.2 Inspect, test and replace the yaw damping actuators/rudder trimming actuators; |  |  |
| directives and service bulletins;   | 1.3 Inspect and replace the yaw damping position                                   |  |  |
| 5. Execute all applicable airworthiness                                     | sensors;   |  |  |
| instructions  | 1.4 Inspect, test and replace the yaw damping steering gears;                      |  |  |
| 6. Perform inspections on the following:                                    | 1.5 Inspect, test and replace the rate gyros;                                      |  |  |
| a. Yaw damping computers/Flight augmentation computers;                     | 1.6 Perform tests of bus controllers and bus information transmission;             |  |  |
| b. Yaw damping actuators/Rudder trimming actuators:                         | 1.7 Use AMMs.  |  |  |
| c. Aircraft control panels;   |  |  |  |
| d. Yaw damping position sensors;  | 2.0 Principles   |  |  |
| e. Rudder change valves;  | The person performing this task must be able to                                    |  |  |
| f. Yaw damping steering gears;  | explain the following principles:  |  |  |
| g. Rate gyros;  | 2.1 Test flows of flight stability augmentation                                    |  |  |
| h. Yaw damping indicators.  | systems;   |  |  |
| the following:  | 2.2 Working principles of flight stability augmentation systems;                   |  |  |
| a. Yaw damping computers/Flight augmentation computers;                     | 2.3 Tanzania civil aviation regulations.   |  |  |
| b. Yaw damping actuators/Rudder trimming actuators;                         | 3.0 Theories   |  |  |
| c. Yaw damping position sensors;  | The person performing this task must be able to                                    |  |  |
| d. Yaw damping steering gears;  | explain the following:   |  |  |
| e. Rate gyros;  | 3.1 Basic methods of aircraft maintenance;   |  |  |
| f. Tests of bus controllers and bus   | 3.2 Human factors in maintenance processes;  |  |  |
| information transmission.   | 3.3 Basic composition of flight stability  |  |  |
| 8. Replace detective components in the flight stability sugmentation system | augmentation systems;  |  |  |
| according to airworthiness  | 3.4 Test methods of flight stability augmentation                                  |  |  |
| requirements:   | systems.   |  |  |
| a Yaw damning computers/Flight  |  |  |  |
| augmentation computers;   | 4.0 Essential Skills   |  |  |

|                          | b Vau damping actuators/Pudder                            | 1 1 Data analysis competence:                          |
|--------------------------|---|--|
|                          | trimming actuators.                                       | 4.1 Data analysis competence,                          |
|                          | c. Yaw damping position sensors:                          | 4.2 Engineering technical report writing               |
|                          | d. Rudder change valves;                                  | 4.2. Computer ability                                  |
|                          | e. Yaw damping steering gears;                            | 4.5 Computer skills;                                   |
|                          | f. Rate gyros;  | 4.4 Competence of using tools and equipment;           |
|                          | g. Yaw damping indicators.                                | 4.5 Problem-solving competence;                        |
| 9.                       | Perform final inspections and sign task                   | 4.6 Stress management;                                 |
|                          | cards;  | 4.7 Teamwork;  |
| 10.                      | Submit task cards to the certification                    | 4.8 Communication skills;                              |
|                          | engineer for certification and aircraft delivery for use; | 4.9 Safety responsibility consciousness.               |
| 11.                      | Restore the aircraft to its normal state                  |  |
| 12.                      | Clean tools, equipment and the workplace;                 |  |
| 11.                      | Store the tools equipment and safety gear; and            |  |
| 12.                      | Observe health, occupational and                          |  |
|                          | environmental safety rules and                            |  |
|                          | regulations.  |  |
| DES                      | SCRIPTION OF THE END                                      | Performance tests of aircraft flight stability         |
| PRO                      | ODUCT / SERVICE   | augmentation systems are conducted in accordance       |
|                          |   | with approved technical specifications and procedures. |
| CIRCUMSTANTIAL KNOWLEDGE |   | Detailed knowledge about:                              |
|                          |   | 1. Safety operation of equipment and tools;            |
|                          |   | 2. Occupational safety and health.                     |
|                          |   |  |

| OCCUPATION              | AVIONICS MAINTENANCE OC<br>ENGINEER NO   | CCUPATIO<br>CODE   |      |
|-------------------------|--|--|------|
| DUTY TITLE              | PERFORM ANALYSIS AND DU<br>ISOLATION OF FAULTS IN THE<br>AIRCRAFT AFCS   | UTY NO.  | 802  |
| TASK TITLE              | CONDUCTANALYSISANDTAXISOLATIONOFFAULTSINTHEAIRCRAFT AFCS </th <th>ASK NO.</th> <th>8027</th>   | ASK NO.  | 8027 |
| PERFORMANCE<br>CRITERIA | The person performing this task must be able to conduct analysis and isolation of faults in the aircraft AFCS in accordance with approved technical specifications and procedures.   |  |      |
| RANGE<br>STATEMENT      | <ul> <li>The task can be performed in an AMO under the senior aircraft maintenance engineers or release.</li> <li>The equipment and tools:</li> <li>Personal protective equipment;</li> <li>Test equipment of yaw damping computers</li> <li>Test equipment of flight stability augments</li> <li>Computer with accessories;</li> <li>Electronics technician's complete tool kit;</li> <li>Voltage-stabilized power supplies;</li> <li>Oscilloscopes;</li> <li>Multimeters;</li> <li>Heat guns;</li> <li>Anti-static wrist straps;</li> <li>Soldering guns;</li> <li>Crimping tools and connector pick-up and 11. Torque wrenches;</li> <li>Safety gear;</li> <li>Work bench.</li> </ul> Materials: <ul> <li>Contact cleaners;</li> <li>Contact cleaners;</li> <li>Electrical jointing;</li> </ul> | e supervision of o<br>se engineers.<br>rs;<br>tation computer<br>t;<br>d delivery tools; | s;   |
|                         | <ol> <li>Wires;</li> <li>Welding materials;</li> <li>Heat shrinkable sleeves;</li> </ol>   |  |      |

|                       | 7. Air   | filters.                              |   |
|-----------------------|--|---------------------------------------|---|
| EVIDENCE              |  |                                       | E REQUIREMENT   |
| PRACTICAL PERFORMANCE |  |                                       | UNDERPINNING KNOWLEDGE  |
| The                   | person performing this task                              | must be                               | Detailed knowledge about:   |
| able                  | e to do the following:                                   |                                       | 1.0 Methods   |
| 1.                    | Select tools, equipment and saf                          | ety gear;                             | The person performing this task must be able to                                   |
| 2.                    | Observe health and safety                                | y when                                | explain how to:   |
| 3.                    | performing the task;<br>Review aircraft status reports;  |                                       | 1.1 Inspect and test the aircraft stability augmentation systems;                 |
| 4.                    | Determine the faults accordin<br>corresponding trouble   | ng to the eshooting                   | 1.2 Analyze the possible fault causes of aircraft stability augmentation systems; |
|                       | manuals;   |                                       | 1.3 Isolate components or circuit faults of aircraft                              |
| 5.                    | Perform fault analysis of the fo                         | ollowing:                             | stability augmentation systems;   |
|                       | a. Yaw damping compute                                   | ers/Flight                            | 1.4 Use AMMs.   |
|                       | augmentation computers;                                  | (D. 11                                |   |
|                       | b. Yaw damping actuators                                 | s/Rudder                              | 2.0 Principles  |
|                       | c Aircraft control panels                                |                                       | The person performing this task must be able to                                   |
|                       | <ul><li>d. Yaw damping position se</li></ul>             | nsors;                                | explain the following principles:   |
|                       | e. Rudder change valves;                                 | , , , , , , , , , , , , , , , , , , , | 2.1 Test flows of flight stability augmentation                                   |
|                       | f. Yaw damping steering ge                               | ears;                                 | systems;  |
|                       | g. Rate gyros;   |                                       | 2.2 Working principles of aircraft stability                                      |
|                       | h. Yaw damping indicators.                               |                                       | augmentation systems;   |
| 6.                    | Perform the following con                                | mponent                               | 2.3 Tanzania civil aviation regulations.  |
|                       | inspections:   |                                       |   |
|                       | a. Yaw damping compute<br>augmentation computers:        | ers/Flight                            | 3.0 Theories  |
|                       | b. Yaw damping actuators                                 | s/Rudder                              | explain the following:  |
|                       | trimming actuators;                                      |                                       | 3.1 Basic methods of aircraft maintenance:  |
|                       | c. Yaw damping control par                               | nels;                                 | 3.2 Human factors in maintenance processes:                                       |
|                       | d. Yaw damping position se                               | nsors;                                | 3.3 Basic composition of flight stability   |
|                       | f. Yaw damping indicators                                | ars;                                  | augmentation systems;   |
| 7                     | Operate and inspect the function                         | ons of the                            | 3.4 Test methods of flight stability augmentation                                 |
|                       | following:   |                                       | systems;  |
|                       | a. Yaw damping compute                                   | ers/Flight                            | 3.5 Analysis methods of fault trees;  |
|                       | augmentation computers;                                  |                                       | 3.6 Methods of measurement and overhaul of  |
|                       | b. Yaw damping actuators                                 | s/Rudder                              | circuits;   |
|                       | trimming actuators;                                      | l                                     | 3.7 The methods of disassembling and assembling                                   |
|                       | c. r aw damping control par<br>d Yaw damping position se | nsors:                                | components.   |
|                       | <ul><li>e. Yaw damping position se</li></ul>             | ars;                                  |   |

| f. Rate gyros;   | 4.0 Essential Skills  |
|--|---|
| g. Yaw damping indicators;   | 4.1 Fault analysis competence;  |
| h. Tests of bus controllers and bus information transmission.  | 4.2 Engineering technical report writing competence;  |
| <ul> <li>8. Isolate possible defective component<br/>and circuit in the following: <ul> <li>a. Yaw damping computers/Flight<br/>augmentation computers;</li> <li>b. Yaw damping actuators/Rudder<br/>trimming actuators;</li> <li>c. Aircraft control panels;</li> <li>d. Yaw damping position sensors;</li> <li>e. Rudder change valves;</li> <li>f. Yaw damping steering gears;</li> <li>g. Rate gyros;</li> <li>h. Yaw damping indicators.</li> </ul> </li> </ul> | <ul> <li>4.3 Computer skills;</li> <li>4.4 Competence of using tools and equipment;</li> <li>4.5 Problem-solving competence;</li> <li>4.6 Stress management;</li> <li>4.7 Teamwork;</li> <li>4.8 Communication skills;</li> <li>4.9 Safety responsibility consciousness.</li> </ul> |
| 9. Perform final inspections and sign corresponding trouble tickets;   |   |
| 10. Submit trouble tickets to the certification engineer for certification and aircraft delivery for use;  |   |
| 11. Restore the aircraft to its normal state   |   |
| 12. Clean tools equipment and the workplace;   |   |
| 13. Store tools, equipment and safety gear.  |   |
| 14. Observe health, occupational and<br>environmental safety rules and<br>regulations.   |   |
| DESCRIPTION OF THE END   | Faults in the aircraft's AFCS are analysed and  |
| PRODUCT / SERVICE  | isolated in accordance with approved technical specifications and procedures.   |
| CIRCUMSTANTIAL KNOWLEDGE   | Detailed knowledge about:   |
|  | 1. Safety operation of equipment and tools;   |
|  | 2. Occupational safety and health.  |

| OCCUPATION               | AVIONICS<br>ENGINEER  | MAINTENANCE  | OCCUPATION<br>CODE   |                     |  |  |
|--------------------------|---|--|--|---------------------|--|--|
| DUTY TITLE               | PERFORM AN<br>ISOLATION OF<br>AIRCRAFT AFCS   | NALYSIS AND<br>FAULTS IN THE                                       | DUTY NO.   | 802                 |  |  |
| TASK TITLE               | CARRY OUT<br>TESTS OF T<br>AUTOMATIC<br>SYSTEMS   | PERFORMANCE<br>THE AIRCRAFT<br>TRIMMING                            | TASK NO.   | 8028                |  |  |
| PERFORMANCE<br>CRITERIA  | The person perform<br>the automatic trim<br>approved technical  | ning this task must be a ming systems of the specifications and pr | able to test the perfore<br>aircraft in accordation<br>ocedures. | rmance of ance with |  |  |
| RANGE<br>STATEMENT       | The task can be performed in an AMO under the supervision of certified senior aircraft maintenance engineers or release engineers.<br>The equipment and tools to be used include: |  |  |                     |  |  |
|                          | Equipment and to  | ols:   |  |                     |  |  |
|                          | 1. Personal prote   | ective equipment   |  |                     |  |  |
|                          | 2. Electronics tec  | hnician's complete to  | ool kit;   |                     |  |  |
|                          | 3. Computers wi   | th accessories;  |  |                     |  |  |
|                          | 4. Oscilloscopes;   |  |  |                     |  |  |
|                          | 5. Multimeters;   |  |  |                     |  |  |
|                          | 6. Anti-static wrist straps;  |  |  |                     |  |  |
|                          | 7. Safety gear;   |  |  |                     |  |  |
|                          | 8. Work bench.  |  |  |                     |  |  |
|                          | Matarials.  |  |  |                     |  |  |
|                          | 1 Contact cleane  | ers.   |  |                     |  |  |
|                          | 2. Contact enhan  | icers.   |  |                     |  |  |
|                          | EVIDENCE  | REQUIREMENT  |  |                     |  |  |
| PRACTICAL PERFOR         | MANCE   | UNDERPINNING   | KNOWLEDGE  |                     |  |  |
| The person performing th | is task must be able  | Detailed knowledge   | e about:   |                     |  |  |
| to do the following:     |   | 1.0 Methods  |  |                     |  |  |
| 1. Select tools, equipme | ent and safety gear;  | The person perform   | ing this task must b   | be able to          |  |  |
| 2. Observe health a      | nd safety when  | explain how to:  |  |                     |  |  |
| performing the task;     |   | 1.1 Inspect the test   | flight control comp  | uters;              |  |  |
| 3. Verify task cards     | and maintenance   | 1.2 Inspect the cont   | rol column switch as   | ssemblies;          |  |  |
| msu ucuons,              |   | 1.3 Inspect the flight control panels;                             |  |                     |  |  |

| 4.                     | Review all applicable airworthiness directives and service bulletins;   | 1.4 Inspect and test the control system components of stabilizer trimming;  |
|------------------------|---|---|
| 5.                     | Execute all applicable airworthiness directives and service bulletin  | 1.5 Inspect and test the autopilot and stabilizer limiting switches;  |
|                        | instructions;   | 1.6 Inspect and test the control components of  |
| 6.                     | Perform inspections on the following:   | elevator trimmers;  |
|                        | a. Stabilizer trim warning lights;  | 1.7 Inspect Integrated flight system accessories  |
|                        | c Flight control panels:  | and assemblies.   |
|                        | <ul><li>d. Stabilizer limiting switches;</li></ul>  | 2.0 Principles  |
|                        | e. Elevator trimmers;   | The person performing this task must be able to   |
|                        | f. Electric actuator cylinders for  | explain the following principles:   |
|                        | stabilizer trimming;  | 2.1 Principles of aircraft speed trim control;  |
|                        | g. Actuator cylinders for Mach trim;  | 2.2 Principles of aircraft Mach number trim   |
|                        | n. Integrated flight system accessories   | control;  |
|                        | i. A/P stabilizer trimming cut-off  | 2.3 Principles of aircraft angle of attack trim   |
|                        | switches;   | control;  |
|                        | j. Flight control computers.  | 2.4 Control principles of the logic and interface   |
| 7.                     | Perform operation tests on the following:   | of flight control computers;  |
|                        | a. Self-testing of digital flight control   | 2.5 Tanzania civil aviation regulations.  |
|                        | systems;  |   |
|                        |   |   |
|                        | b. Velocity trimming;   | 3.0 Theories  |
|                        | <ul> <li>b. Velocity trimming;</li> <li>c. Velocity trimming cut-off electronic switches;</li> </ul>  | <b>3.0 Theories</b><br>The person performing this task must be able to explain the following:   |
|                        | <ul> <li>b. Velocity trimming;</li> <li>c. Velocity trimming cut-off electronic switches;</li> <li>d. Velocity trimming detectors;</li> </ul>   | <ul><li>3.0 Theories</li><li>The person performing this task must be able to explain the following:</li><li>3.1 Basic methods of aircraft maintenance;</li></ul>  |
|                        | <ul> <li>b. Velocity trimming;</li> <li>c. Velocity trimming cut-off electronic switches;</li> <li>d. Velocity trimming detectors;</li> <li>e. Stabilizer trim detectors;</li> <li>f. Accombling of A (Destabilizer trim</li> </ul>   | <ul> <li>3.0 Theories</li> <li>The person performing this task must be able to explain the following:</li> <li>3.1 Basic methods of aircraft maintenance;</li> <li>3.2 Human factors in maintenance processes;</li> </ul>   |
|                        | <ul> <li>b. Velocity trimming;</li> <li>c. Velocity trimming cut-off electronic switches;</li> <li>d. Velocity trimming detectors;</li> <li>e. Stabilizer trim detectors;</li> <li>f. Assemblies of A/P stabilizer trim cut-off switches:</li> </ul>  | <ul> <li>3.0 Theories</li> <li>The person performing this task must be able to explain the following:</li> <li>3.1 Basic methods of aircraft maintenance;</li> <li>3.2 Human factors in maintenance processes;</li> <li>3.3 Basic composition of flight automatic trim</li> </ul>   |
|                        | <ul> <li>b. Velocity trimming;</li> <li>c. Velocity trimming cut-off electronic switches;</li> <li>d. Velocity trimming detectors;</li> <li>e. Stabilizer trim detectors;</li> <li>f. Assemblies of A/P stabilizer trim cut-off switches;</li> <li>g. Electric actuator cylinders for</li> </ul>  | <ul> <li>3.0 Theories</li> <li>The person performing this task must be able to explain the following:</li> <li>3.1 Basic methods of aircraft maintenance;</li> <li>3.2 Human factors in maintenance processes;</li> <li>3.3 Basic composition of flight automatic trim systems;</li> </ul>  |
|                        | <ul> <li>b. Velocity trimming;</li> <li>c. Velocity trimming cut-off electronic switches;</li> <li>d. Velocity trimming detectors;</li> <li>e. Stabilizer trim detectors;</li> <li>f. Assemblies of A/P stabilizer trim cut-off switches;</li> <li>g. Electric actuator cylinders for stabilizer trimming;</li> </ul>   | <ul> <li>3.0 Theories</li> <li>The person performing this task must be able to explain the following:</li> <li>3.1 Basic methods of aircraft maintenance;</li> <li>3.2 Human factors in maintenance processes;</li> <li>3.3 Basic composition of flight automatic trim systems;</li> <li>3.4 Test methods for flight automatic trim</li> </ul>  |
|                        | <ul> <li>b. Velocity trimming;</li> <li>c. Velocity trimming cut-off electronic switches;</li> <li>d. Velocity trimming detectors;</li> <li>e. Stabilizer trim detectors;</li> <li>f. Assemblies of A/P stabilizer trim cut-off switches;</li> <li>g. Electric actuator cylinders for stabilizer trimming;</li> <li>h. Mach trim;</li> </ul>  | <ul> <li>3.0 Theories</li> <li>The person performing this task must be able to explain the following:</li> <li>3.1 Basic methods of aircraft maintenance;</li> <li>3.2 Human factors in maintenance processes;</li> <li>3.3 Basic composition of flight automatic trim systems;</li> <li>3.4 Test methods for flight automatic trim systems.</li> </ul>   |
|                        | <ul> <li>b. Velocity trimming;</li> <li>c. Velocity trimming cut-off electronic switches;</li> <li>d. Velocity trimming detectors;</li> <li>e. Stabilizer trim detectors;</li> <li>f. Assemblies of A/P stabilizer trim cut-off switches;</li> <li>g. Electric actuator cylinders for stabilizer trimming;</li> <li>h. Mach trim;</li> <li>i. Warning signals of Mach trim.</li> </ul>  | <ul> <li>3.0 Theories</li> <li>The person performing this task must be able to explain the following:</li> <li>3.1 Basic methods of aircraft maintenance;</li> <li>3.2 Human factors in maintenance processes;</li> <li>3.3 Basic composition of flight automatic trim systems;</li> <li>3.4 Test methods for flight automatic trim systems.</li> </ul>   |
| 8.                     | <ul> <li>b. Velocity trimming;</li> <li>c. Velocity trimming cut-off electronic switches;</li> <li>d. Velocity trimming detectors;</li> <li>e. Stabilizer trim detectors;</li> <li>f. Assemblies of A/P stabilizer trim cut-off switches;</li> <li>g. Electric actuator cylinders for stabilizer trimming;</li> <li>h. Mach trim;</li> <li>i. Warning signals of Mach trim.</li> <li>Perform final inspections and sign task</li> </ul>   | <ul> <li>3.0 Theories</li> <li>The person performing this task must be able to explain the following:</li> <li>3.1 Basic methods of aircraft maintenance;</li> <li>3.2 Human factors in maintenance processes;</li> <li>3.3 Basic composition of flight automatic trim systems;</li> <li>3.4 Test methods for flight automatic trim systems.</li> <li>4.0 Essential Skills</li> </ul>   |
| 8.                     | <ul> <li>b. Velocity trimming;</li> <li>c. Velocity trimming cut-off electronic switches;</li> <li>d. Velocity trimming detectors;</li> <li>e. Stabilizer trim detectors;</li> <li>f. Assemblies of A/P stabilizer trim cut-off switches;</li> <li>g. Electric actuator cylinders for stabilizer trimming;</li> <li>h. Mach trim;</li> <li>i. Warning signals of Mach trim.</li> <li>Perform final inspections and sign task cards;</li> </ul>  | <ul> <li>3.0 Theories</li> <li>The person performing this task must be able to explain the following:</li> <li>3.1 Basic methods of aircraft maintenance;</li> <li>3.2 Human factors in maintenance processes;</li> <li>3.3 Basic composition of flight automatic trim systems;</li> <li>3.4 Test methods for flight automatic trim systems.</li> <li>4.0 Essential Skills</li> <li>4.1 Data analysis competence;</li> </ul>  |
| 8.                     | <ul> <li>b. Velocity trimming;</li> <li>c. Velocity trimming cut-off electronic switches;</li> <li>d. Velocity trimming detectors;</li> <li>e. Stabilizer trim detectors;</li> <li>f. Assemblies of A/P stabilizer trim cut-off switches;</li> <li>g. Electric actuator cylinders for stabilizer trimming;</li> <li>h. Mach trim;</li> <li>i. Warning signals of Mach trim.</li> <li>Perform final inspections and sign task cards;</li> <li>Submit task cards to the certification engineer for extification and sign for extification and sign for extification and sign for extification.</li> </ul>   | <ul> <li>3.0 Theories</li> <li>The person performing this task must be able to explain the following:</li> <li>3.1 Basic methods of aircraft maintenance;</li> <li>3.2 Human factors in maintenance processes;</li> <li>3.3 Basic composition of flight automatic trim systems;</li> <li>3.4 Test methods for flight automatic trim systems.</li> <li>4.0 Essential Skills</li> <li>4.1 Data analysis competence;</li> <li>4.2 Engineering technical report writing</li> </ul>  |
| 8.<br>9.               | <ul> <li>b. Velocity trimming;</li> <li>c. Velocity trimming cut-off electronic switches;</li> <li>d. Velocity trimming detectors;</li> <li>e. Stabilizer trim detectors;</li> <li>f. Assemblies of A/P stabilizer trim cut-off switches;</li> <li>g. Electric actuator cylinders for stabilizer trimming;</li> <li>h. Mach trim;</li> <li>i. Warning signals of Mach trim.</li> <li>Perform final inspections and sign task cards;</li> <li>Submit task cards to the certification engineer for certification and aircraft release for use:</li> </ul>   | <ul> <li>3.0 Theories</li> <li>The person performing this task must be able to explain the following:</li> <li>3.1 Basic methods of aircraft maintenance;</li> <li>3.2 Human factors in maintenance processes;</li> <li>3.3 Basic composition of flight automatic trim systems;</li> <li>3.4 Test methods for flight automatic trim systems.</li> <li>4.0 Essential Skills</li> <li>4.1 Data analysis competence;</li> <li>4.2 Engineering technical report writing competence;</li> </ul>  |
| 8.<br>9.               | <ul> <li>b. Velocity trimming;</li> <li>c. Velocity trimming cut-off electronic switches;</li> <li>d. Velocity trimming detectors;</li> <li>e. Stabilizer trim detectors;</li> <li>f. Assemblies of A/P stabilizer trim cut-off switches;</li> <li>g. Electric actuator cylinders for stabilizer trimming;</li> <li>h. Mach trim;</li> <li>i. Warning signals of Mach trim.</li> <li>Perform final inspections and sign task cards;</li> <li>Submit task cards to the certification engineer for certification and aircraft release for use;</li> </ul>   | <ul> <li>3.0 Theories</li> <li>The person performing this task must be able to explain the following:</li> <li>3.1 Basic methods of aircraft maintenance;</li> <li>3.2 Human factors in maintenance processes;</li> <li>3.3 Basic composition of flight automatic trim systems;</li> <li>3.4 Test methods for flight automatic trim systems.</li> <li>4.0 Essential Skills</li> <li>4.1 Data analysis competence;</li> <li>4.2 Engineering technical report writing competence;</li> <li>4.3 Computer skills;</li> </ul>  |
| 8.<br>9.<br>10.        | <ul> <li>b. Velocity trimming;</li> <li>c. Velocity trimming cut-off electronic switches;</li> <li>d. Velocity trimming detectors;</li> <li>e. Stabilizer trim detectors;</li> <li>f. Assemblies of A/P stabilizer trim cut-off switches;</li> <li>g. Electric actuator cylinders for stabilizer trimming;</li> <li>h. Mach trim;</li> <li>i. Warning signals of Mach trim.</li> <li>Perform final inspections and sign task cards;</li> <li>Submit task cards to the certification engineer for certification and aircraft release for use;</li> <li>Restore the aircraft to its normal state</li> </ul>   | <ul> <li>3.0 Theories</li> <li>The person performing this task must be able to explain the following:</li> <li>3.1 Basic methods of aircraft maintenance;</li> <li>3.2 Human factors in maintenance processes;</li> <li>3.3 Basic composition of flight automatic trim systems;</li> <li>3.4 Test methods for flight automatic trim systems.</li> <li>4.0 Essential Skills</li> <li>4.1 Data analysis competence;</li> <li>4.2 Engineering technical report writing competence;</li> <li>4.3 Computer skills;</li> <li>4.4 Competence of using tools and equipment;</li> </ul>  |
| 8.<br>9.<br>10.<br>11. | <ul> <li>b. Velocity trimming;</li> <li>c. Velocity trimming cut-off electronic switches;</li> <li>d. Velocity trimming detectors;</li> <li>e. Stabilizer trim detectors;</li> <li>f. Assemblies of A/P stabilizer trim cut-off switches;</li> <li>g. Electric actuator cylinders for stabilizer trimming;</li> <li>h. Mach trim;</li> <li>i. Warning signals of Mach trim.</li> <li>Perform final inspections and sign task cards;</li> <li>Submit task cards to the certification engineer for certification and aircraft release for use;</li> <li>Restore the aircraft to its normal state Clean tools, equipment and the workplace;</li> </ul>   | <ul> <li>3.0 Theories</li> <li>The person performing this task must be able to explain the following:</li> <li>3.1 Basic methods of aircraft maintenance;</li> <li>3.2 Human factors in maintenance processes;</li> <li>3.3 Basic composition of flight automatic trim systems;</li> <li>3.4 Test methods for flight automatic trim systems.</li> <li>4.0 Essential Skills</li> <li>4.1 Data analysis competence;</li> <li>4.2 Engineering technical report writing competence;</li> <li>4.3 Computer skills;</li> <li>4.4 Competence of using tools and equipment;</li> <li>4.5 Problem-solving competence;</li> </ul>                                 |
| 8.<br>9.<br>10.<br>11. | <ul> <li>b. Velocity trimming;</li> <li>c. Velocity trimming cut-off electronic switches;</li> <li>d. Velocity trimming detectors;</li> <li>e. Stabilizer trim detectors;</li> <li>f. Assemblies of A/P stabilizer trim cut-off switches;</li> <li>g. Electric actuator cylinders for stabilizer trimming;</li> <li>h. Mach trim;</li> <li>i. Warning signals of Mach trim.</li> <li>Perform final inspections and sign task cards;</li> <li>Submit task cards to the certification engineer for certification and aircraft release for use;</li> <li>Restore the aircraft to its normal state Clean tools, equipment and the workplace;</li> <li>Store tools equipment and safety gear.</li> </ul> | <ul> <li>3.0 Theories</li> <li>The person performing this task must be able to explain the following:</li> <li>3.1 Basic methods of aircraft maintenance;</li> <li>3.2 Human factors in maintenance processes;</li> <li>3.3 Basic composition of flight automatic trim systems;</li> <li>3.4 Test methods for flight automatic trim systems.</li> <li>4.0 Essential Skills</li> <li>4.1 Data analysis competence;</li> <li>4.2 Engineering technical report writing competence;</li> <li>4.3 Computer skills;</li> <li>4.4 Competence of using tools and equipment;</li> <li>4.5 Problem-solving competence;</li> <li>4.6 Stress management;</li> </ul> |

| 11. Observe health, occupational and        | 4.8 Communication skills;   |
|---|---|
| environmental safety rules and regulations. | 4.9 Safety responsibility consciousness.  |
| DESCRIPTION OF THE END<br>PRODUCT / SERVICE | Performance tests of aircraft automatic trimming<br>systems are conducted in accordance with<br>approved technical specifications and procedures. |
| CIRCUMSTANTIAL KNOWLEDGE                    | Detailed knowledge about:   |
|   | 1. Safety operation of equipment and tools;   |
|   | 2. Occupational safety and health.  |

| OCCUPATION              | AVIONICS<br>ENGINEER  | MAINTENANCE   | OCCUPATION<br>CODE  |                               |  |  |
|-------------------------|---|---|---|-------------------------------|--|--|
| DUTY TITLE              | PERFORM A<br>ISOLATION OF<br>AIRCRAFT AF  | NALYSIS AND<br>F FAULTS IN THE<br>CS                                      | DUTY NO.  | 802                           |  |  |
| TASK TITLE              | PERFORM FAULT ANALYSIS<br>AND ISOLATION OF AIRCRAFT<br>AUTOMATICTASK NO.80298029  |   |   |                               |  |  |
| PERFORMANCE<br>CRITERIA | The person perfo<br>and isolation of a<br>approved technic  | orming this task mus<br>aircraft automatic trir<br>cal specifications and | t be able to conduct fa<br>nming systems in acco<br>d procedures. | ault analysis<br>ordance with |  |  |
| RANGE<br>STATEMENT      | <ul> <li>approved technical specifications and procedures.</li> <li>The task can be performed in an AMO under the supervision of certified senior aircraft maintenance engineers or release engineers.</li> <li>The equipment and tools to be used include:</li> <li>Equipment and tools: <ol> <li>Personal protective equipment;</li> <li>Computers with accessories;</li> <li>Electronics technician's complete tool kit</li> <li>Oscilloscopes;</li> <li>Multimeters;</li> <li>Heat guns;</li> <li>Anti-static wrist straps;</li> <li>Soldering guns;</li> <li>Crimping tools and connector pick-up and delivery tools;</li> </ol> </li> </ul> |   |   |                               |  |  |
|                         | Materials:1. Contact cleaners;2. Contact enhancers;3. Electrical jointing;4. Wires;5. Welding materials;6. Heat shrinkable sleeves.   |   |   |                               |  |  |
|                         | EVIDENC   | E REQUIREMENT   | [   |                               |  |  |
| PRACTICAL PERFOR        | MANCE   | UNDERPINNING  | KNOWLEDGE   |                               |  |  |

| The  | e pers       | son performing this task must be                     | Deta        | ailed knowledge about:                                  |
|------|--------------|--|-------------|---|
| able | e to d       | o the following:                                     | 1.0         | Methods   |
| 1.   | Sele<br>gear | ect tools, equipment and safety                      | The<br>expl | person performing this task must be able to ain how to: |
| 2.   | Obs          | erve health and safety regulations;                  | 1.1         | Inspect and test the aircraft automatic trim            |
| 3.   | Rev          | iew aircraft status reports;                         |             | systems;  |
| 4.   | Ana          | lyze and isolate faults according to                 | 1.2         | Analyze the possible fault causes of aircraft           |
|      | the          | corresponding test reports and                       |             | automatic trim systems;                                 |
| _    | trou         | bleshooting manuals;                                 | 1.3         | Isolate components or circuit faults of aircraft        |
| Э.   | Peri         | orm tests on the following items:                    | 1 4         | automatic trimming systems;                             |
|      | a.           | control systems.                                     | 1.4         | Use AMMs.   |
|      | b.           | Velocity trimming;                                   | 2.0         | Desire starles  |
|      | c.           | Velocity trimming cut-off                            | 2.0<br>The  | Principles  |
|      | d.           | electronic switches;<br>Velocity trimming detectors; | expl        | ain the following principles:                           |
|      | e.           | Stabilizer trim detectors;                           | 2.1         | Test flows of aircraft automatic trim systems;          |
|      | f.           | Assemblies of A/P stabilizer trim                    | 2.2         | Working principles of aircraft automatic trim           |
|      |              | cut-off switches;                                    |             | systems;  |
|      | g.           | Electric actuator cylinders for stabilizer trimming; | 2.3         | Tanzania civil aviation regulations.                    |
|      | h.           | Mach trim;   | 3.0         | Theories  |
| -    | 1.           | warning signals of Mach trim.                        | The         | person performing this task must be able to             |
| 6.   | Peri         | form system-level fault analysis of                  | expl        | ain the following:                                      |
|      | a            | Aircraft speed trim systems:                         | 3.1         | Basic methods of aircraft maintenance;                  |
|      | a.<br>b.     | Aircraft Mach trim systems;                          | 3.2         | Human factors in maintenance processes;                 |
|      | c.           | Aircraft angle of attack trim                        | 3.3         | Basic composition of flight automatic trim systems;     |
|      | d.           | Aircraft automatic driving trim                      | 3.4         | Test methods for flight automatic trim systems;         |
|      |              | systems.   | 3.5         | Analysis methods of fault trees;                        |
| 7.   | Isol         | ate possible faults in:                              | 3.6         | Methods of measurement and overhaul of                  |
|      | a.           | Stabilizer trim warning lights;                      |             | circuits;   |
|      | b.           | Control column switch assemblies;                    | 3.7         | The methods of disassembling and assembling components  |
|      | c.           | Stabilizer limiting switches;                        |             | components.   |
|      | d.           | Elevator trimmer control                             | 4.0         | Essential Skills  |
|      | е            | Electric actuator cylinders for                      | 4.1         | Fault analysis competence;                              |
|      | υ.           | stabilizer trimming:                                 | 4.2         | Engineering technical report writing                    |
|      | f.           | Actuator cylinders for Mach trim;                    |             | competence;   |
|      | g.           | Integrated flight system                             | 4.3         | Computer skills;  |
|      |              | accessories and assemblies;                          | 4.4         | Competence of using tools and equipment;                |

| h. A/P stabilizer trimming cut-off   | 4.5 Problem-solving competence;  |
|--|--|
| switches;  | 4.6 Stress management;   |
| i. Flight control computers.   | 4.7 Teamwork;  |
| <ol> <li>Perform final inspections and sign corresponding task cards;</li> <li>Submit task cards to the certification engineer for certification and aircraft release for use;</li> <li>Restore the aircraft to its normal state</li> <li>Clean tools, equipment and the workplace;</li> <li>Store tools equipment and safety gear;</li> </ol> | <ul><li>4.8 Communication skills;</li><li>4.9 Safety responsibility consciousness.</li></ul>   |
| Observe health, occupational and<br>environmental safety rules and<br>regulations.   |  |
| DESCRIPTION OF THE END<br>PRODUCT / SERVICE  | Faults in aircraft automatic trimming systems are<br>analysed and isolated in accordance with approved<br>technical specifications and procedures. |
| CIRCUMSTANTIAL KNOWLEDGE   | Detailed knowledge about:  |
|  | 1. Safety operation of equipment and tools;  |
|  | 2. Occupational health and safety.   |

| OC  | CUPATION   | AVIONICS MAINTENANCE OCCUPATION<br>ENGINEER CODE   |   |  |  |  |  |  |
|---|--|--|---|--|--|--|--|--|
| DU  | TY TITLE   | PERFORMANALYSISANDDUTY NO.802ISOLATIONOFFAULTSINTHEAIRCRAFTAFCS  |   |  |  |  |  |  |
| TAS   | SK TITLE   | IMPLEMENT ANALYSIS OF THE<br>LAWS OF AIRCRAFT AUTOMATICTASK NO.80210PILOTING80210  |   |  |  |  |  |  |
| PEI<br>CR   | RFORMANCE<br>ITERIA  | The person performing this task must be able to analyse the laws of aircraft automatic piloting in accordance with approved technical specifications and procedures.   |   |  |  |  |  |  |
| RA<br>STA   | NGE<br>ATEMENT   | <ul> <li>The task can be performed in an AMO under the supervision of certified senior aircraft maintenance engineers or release engineers.</li> <li>The equipment and tools to be used include: <ol> <li>Personal protective equipment;</li> <li>Computers with accessories.</li> </ol> </li> </ul> |   |  |  |  |  |  |
|   |  | EVIDEN   | CE REQUIREMENT  |  |  |  |  |  |
| PR  | ACTICAL PERFO  | RMANCE   | UNDERPINNING KNOWLEDGE  |  |  |  |  |  |
| <ul> <li>The person performing this task must be able to do the following:</li> <li>1. Analyze the control laws of course selection in rolling channels;</li> <li>2. Analyze the control laws of attitude keeping in rolling channels;</li> </ul> |  | Detailed knowledge at<br>1.0 Methods   | oout:   |  |  |  |  |  |
| 1.<br>2.  | Analyze the contr<br>selection in rolling<br>Analyze the contro<br>keeping in rolling  | ol laws of course<br>g channels;<br>ol laws of attitude<br>channels;   | <ul><li>1.1 Analyze the contr<br/>rolling channels;</li></ul>   | g this task must be<br>ol laws of working :  | e able to<br>modes of                                      |  |  |  |
| <ol> <li>2.</li> <li>3.</li> </ol>  | Analyze the contr<br>selection in rolling<br>Analyze the contro<br>keeping in rolling<br>Analyze the contro<br>steering wheel co<br>channels;  | ol laws of course<br>g channels;<br>ol laws of attitude<br>channels;<br>trol laws of the<br>ontrol in rolling  | <ul> <li>1.1 Analyze the contr<br/>rolling channels;</li> <li>1.2 Analyze the contr<br/>pitching channels.</li> </ul>   | g this task must be<br>ol laws of working :<br>ol laws of working :  | e able to<br>modes of<br>modes of                          |  |  |  |
| <ol> <li>1.</li> <li>2.</li> <li>3.</li> <li>4.</li> </ol>  | Analyze the contr<br>selection in rolling<br>Analyze the contro<br>keeping in rolling<br>Analyze the contro<br>steering wheel co<br>channels;<br>Analyze the contro<br>keeping in rolling  | ol laws of course<br>g channels;<br>ol laws of attitude<br>channels;<br>trol laws of the<br>ontrol in rolling<br>ol laws of course<br>channels;  | <ul> <li>1.1 Analyze the contr<br/>rolling channels;</li> <li>1.2 Analyze the contr<br/>pitching channels.</li> <li>2.0 Principles</li> <li>The person performin</li> </ul>   | g this task must be<br>ol laws of working :<br>ol laws of working :<br>g this task must be   | e able to<br>modes of<br>modes of<br>e able to             |  |  |  |
| 1.         2.         3.         4.         5.         6.   | Analyze the contr<br>selection in rolling<br>Analyze the control<br>keeping in rolling<br>Analyze the control<br>steering wheel co-<br>channels;<br>Analyze the control<br>keeping in rolling<br>Analyze the corr<br>VOR/LOC interce<br>A/P and F/D rollin<br>Analyze the control  | ol laws of course<br>g channels;<br>ol laws of attitude<br>channels;<br>trol laws of the<br>ontrol in rolling<br>ol laws of course<br>channels;<br>ttrol laws when<br>pt mode is in the<br>g channels;<br>ol laws when the   | <ul> <li>Ine person performin<br/>explain how to:</li> <li>1.1 Analyze the contr<br/>rolling channels;</li> <li>1.2 Analyze the contr<br/>pitching channels.</li> <li>2.0 Principles</li> <li>The person performin<br/>explain the following p</li> <li>2.1 Principles of sele<br/>rolling channels;</li> <li>2.2 Distribution</li> </ul>                           | g this task must be<br>ol laws of working<br>ol laws of working<br>g this task must be<br>rinciples:<br>cting the working r                            | e able to<br>modes of<br>modes of<br>e able to<br>nodes of |  |  |  |
| <ol> <li>1.</li> <li>2.</li> <li>3.</li> <li>4.</li> <li>5.</li> <li>6.</li> </ol>  | Analyze the contr<br>selection in rolling<br>Analyze the control<br>keeping in rolling<br>Analyze the control<br>steering wheel co-<br>channels;<br>Analyze the control<br>keeping in rolling<br>Analyze the control<br>VOR/LOC interce<br>A/P and F/D rolling<br>Analyze the control<br>flight guidance inst<br>lifting speed keep<br>pitch channels; | ol laws of course<br>g channels;<br>ol laws of attitude<br>channels;<br>trol laws of the<br>ontrol in rolling<br>ol laws of course<br>channels;<br>ttrol laws when<br>pt mode is in the<br>g channels;<br>ol laws when the<br>strument is in the<br>ing mode in A/P                                  | <ul> <li>Ine person performin<br/>explain how to:</li> <li>1.1 Analyze the contr<br/>rolling channels;</li> <li>1.2 Analyze the contr<br/>pitching channels.</li> <li>2.0 Principles</li> <li>The person performin<br/>explain the following p</li> <li>2.1 Principles of sele<br/>rolling channels;</li> <li>2.2 Principles of sele<br/>pitch channels.</li> </ul> | g this task must be<br>ol laws of working a<br>ol laws of working a<br>g this task must be<br>rinciples:<br>cting the working r<br>cting the working r | e able to<br>modes of<br>modes of<br>e able to<br>modes of |  |  |  |

| 8. Analyze the control laws whe   | en the           | 3.1 Basic composition of automatic control systems;   |
|---|------------------|---|
| A/P and F/D pitch channels ar<br>in the lifting speed keeping m                             | e both<br>ode;   | 3.2 Selection methods of the patterns of the mode control panels;   |
| <ol> <li>Analyze the control laws of pi<br/>altitude keeping in pi<br/>channels;</li> </ol> | tching<br>tching | 3.3 Analysis methods of the laws of automatic driving control.  |
| 10. Analyze the control laws of   | of the           | 4.0 Essential Skills  |
| height selection mode of A/   | /P-F/D           | 4.1 Fault analysis competence;  |
| 11. Analyze the control laws when A/D E/D mitch channels indice                             | en the           | 4.2 Engineering technical report writing competence;  |
| airspeed keeping mode:  | tes the          | 4.3 Computer skills;  |
| 12. Analyze the control laws of the   | Mach             | 4.4 Competence of using tools and equipment;  |
| number keeping mode in A/P-F/D  |                  | 4.5 Problem-solving competence;   |
| pitching channels.  |                  | 4.6 Stress management;  |
| 13. Observe health, occupationa   | and              | 4.7 Teamwork;   |
| environmental safety rules  | and              | 4.8 Communication skills;   |
| regulations.  |                  | 4.9 Safety responsibility consciousness.  |
| DESCRIPTION OF THE END<br>PRODUCT / SERVICE   |                  | Aircraft automatic driving control laws are analysed in accordance with approved technical specifications and procedures. |
| CIRCUMSTANTIAL KNOWLE   | DGE              | Detailed knowledge about:   |
|   |                  | 1. Safety operation of equipment and tools;   |
|   |                  | 2. Occupational health and safety.  |

| OCCUPATION   | AVIONICS MAINTENANCE OCCUPATION<br>ENGINEER CODE  |                   |  |                      |         |  |
|--|---|-------------------|--|----------------------|---------|--|
| DUTY TITLE   | PERFORMANALYSISANDDUTY NO.802ISOLATIONOFFAULTSINTHEAIRCRAFTAFCS   |                   |  |                      |         |  |
| TASK TITLE   | DESIGN THE L<br>AUTOMATIC D   | AWS<br>RIVI       | S OF AIRCRAFT<br>NG  | TASK NO.             | 80211   |  |
| PERFORMANCE<br>CRITERIA  | The person performing this task must be able to design the laws of aircraft<br>automatic driving in accordance with approved technical specifications<br>and procedures.  |                   |  |                      |         |  |
| RANGE<br>STATEMENT   | <ul> <li>The task can be performed in an AMO under the supervision of certified senior aircraft maintenance engineers or release engineers.</li> <li>The equipment and tools to be used include: <ol> <li>Personal protective equipment;</li> <li>Computers with accessories.</li> </ol> </li> </ul>  |                   |  |                      |         |  |
|  | EVIDEN  | CE R              | EQUIREMENT   |                      |         |  |
| PRACTICAL PERFORMANCE  |   |                   | UNDERPINNING KNOWLEDGE   |                      |         |  |
| <ol> <li>able to do the following</li> <li>able to do the following</li> <li>Design the control selection in rolling</li> <li>Design the control keeping in rolling</li> <li>Design the control steering wheel control channels;</li> <li>Design the control keeping in rolling</li> <li>Design the control channels;</li> <li>Design the control flight guidance in lifting speed keeping in the control flight guidance in lifting speed keeping;</li> <li>Design the control flight guidance in lifting speed keeping;</li> </ol> | <ul> <li>The person performing this task must be able to do the following:</li> <li>1. Design the control laws of course selection in rolling channels;</li> <li>2. Design the control laws of altitude keeping in rolling channels;</li> <li>3. Design the control laws of the steering wheel control in rolling channels;</li> <li>4. Design the control laws of course keeping in rolling channels;</li> <li>5. Design the control laws when VOR/LOC intercept mode is in the A/P and F/D rolling channels;</li> <li>6. Design the control laws when the flight guidance instrument is in the lifting speed keeping mode in A/P patch channels;</li> </ul> |                   | <ul> <li>1.0 Methods</li> <li>The person performing this task must be able to explain how to:</li> <li>1.1 Design the control laws of working modes of rolling channels;</li> <li>1.2 Design the control laws of working modes of pitching channels.</li> <li>2.0 Principles</li> <li>The person performing this task must be able to explain the following principles:</li> <li>2.1 Principles of selecting the working modes of rolling channels;</li> <li>2.2 Principles of selecting the working modes of pitch channels;</li> <li>2.3 Working principles of automatic control systems.</li> </ul> |                      |         |  |
| attitude keeping in pitching channels;   |   | 3.0<br>The<br>exp | Theories<br>person performin<br>lain the following:  | ng this task must be | able to |  |

| 8.                             | Design the control laws when the       | 3.1  | Basic composition of automatic control systems;   |
|--------------------------------|--|--|---|
|                                | A/P and F/D pitch channels are both    | 3.2  | Selection methods of the patterns of the mode     |
|                                | in the lifting speed keeping mode;     |  | control panels;                                   |
| 9.                             | Design the control laws of pitching    | 3.3  | Analysis methods of the laws of automatic         |
|                                | altitude keeping in pitching channels; |  | driving control.                                  |
|                                | Design the control laws of the height  |  |   |
|                                | channels:                              | 4.0  | Essential Skills                                  |
| 10                             | Design the control laws when the       | 4.1  | Fault analysis competence;                        |
| 10.                            | A/P-F/D pitch channels indicates the   | 4.2  | Engineering technical report writing              |
|                                | airspeed keeping mode;                 |  | competence;                                       |
| 11.                            | Design the control laws of the Mach    | 4.3  | Computer skills;                                  |
|                                | number keeping mode in A/P-F/D         | 4.4  | Competence of using tools and equipment;          |
|                                | pitching channels.                     | 4.5  | Problem-solving competence;                       |
| 12.                            | Observe health, occupational and       | 4.6  | Stress management;                                |
| environmental safety rules and |  | 4.7  | Teamwork;   |
|                                | regulations.                           | 4.8  | Communication skills;                             |
|                                |  | 4.9  | Safety responsibility consciousness.              |
| DES                            | CRIPTION OF THE END                    | Airo   | craft automatic driving control laws are designed |
| PRO                            | DUCT / SERVICE                         | in accordance with approved technical specifications |   |
|                                |  | and  | procedures.                                       |
| CIR                            | CUMSTANTIAL KNOWLEDGE                  | Det  | ailed knowledge about:                            |
|                                |  | 1.   | Safety operation of equipment and tools;          |
|                                |  | 2.   | Occupational health and safety.                   |

| OCCUPATION              | AVIONICS MAINTENANCE<br>ENGINEER   | OCCUPATION<br>CODE  |                          |  |  |  |
|-------------------------|--|---|--------------------------|--|--|--|
| DUTY TITLE              | PERFORMANALYSISANDDUTY NO.802ISOLATIONOF FAULTSINTHEAIRCRAFTAFCS   |   |                          |  |  |  |
| TASK TITLE              | CARRY OUT INTEGRATED FAULT<br>TRACING AND DIAGNOSIS OF<br>AIRCRAFT AFCSTASK NO.80212   |   |                          |  |  |  |
| PERFORMANCE<br>CRITERIA | The person performing this task must be<br>tracing and diagnosis in aircraft AFCS<br>technical specifications and procedures   | able to perform integ<br>in accordance with   | grated fault<br>approved |  |  |  |
| RANGE<br>STATEMENT      | <ul> <li>The task can be performed in an AMO ur senior aircraft maintenance engineers of The equipment and tools to be used inclection (1997)</li> <li>Equipment and tools: <ol> <li>Personal protective equipment;</li> <li>Computers with accessories;</li> <li>Electronics technician's complete (1997)</li> <li>Multimeters;</li> <li>Oscilloscopes;</li> <li>Heat guns;</li> <li>Anti-static wrist straps;</li> <li>Welding guns;</li> <li>Crimping tools and connector pick (10). Test devices of flight control computation (11). Test devices of autothrottle computation (13). Safety gear;</li> <li>Work bench.</li> </ol> </li> <li>Materials: <ol> <li>Contact cleaners;</li> <li>Contact cleaners;</li> <li>Electrical jointing:</li> </ol> </li> </ul> | der the supervision of<br>r release engineers.<br>ude:<br>tool kit;<br>-up and delivery too<br>puters;<br>ters;<br>n computers; | of certified             |  |  |  |
|                         | <ol> <li>Electrical jointing;</li> <li>Wires;</li> <li>Welding materials;</li> <li>Heat shrinkable sleeves;</li> <li>Sealants and solvents.</li> </ol>   |   |                          |  |  |  |

|   | EVIDENCE REQUIREMENT  |             |   |  |
|---|---|-------------|---|--|
| PRACTICAL PERFORMANCE                   |   |             | UNDERPINNING KNOWLEDGE  |  |
| The person performing this task must be |   | Deta        | Detailed knowledge about:   |  |
| able to do the following:               |   | 1.0         | Methods   |  |
| 1.                                      | Select tools, equipment and safety gear;  | The<br>expl | person performing this task must be able to ain how to:                   |  |
| 2.<br>3.                                | Observe health and safety regulations;<br>Review aircraft status reports;                             | 1.1         | Perform the component fault detection and diagnosis of aircraft AFCS;     |  |
| 4.                                      | Determine faults according to test reports, AMMs, etc.;   | 1.2         | Perform the circuit fault detection and diagnosis of aircraft AFCS;       |  |
| 5.                                      | Trace and diagnose faults in the following system components:   | 1.3         | Use AMMs.   |  |
|   | a. Autopilot/Flight guidance  | 2.0         | Principles  |  |
|   | <ul><li>systems;</li><li>b. Autothrottle systems;</li><li>a. Elight stability sugmentation</li></ul>  | The<br>expl | person performing this task must be able to ain the following principles: |  |
|   | <ul> <li>c. Fright stability augmentation<br/>systems;</li> <li>d. Automatic trim systems.</li> </ul> | 2.1         | Working principles of aircraft autopilot/flight guidance systems;         |  |
| 6                                       | Trace and diagnose faults in the  | 2.2         | Working principles of autothrottle systems;                               |  |
| 0.                                      | following system circuits:  | 2.3         | Working principles of flight stability augmentation systems;              |  |
|   | a. Autophot/Flight guidance<br>systems;   | 2.4         | Working principles of automatic trimming systems:                         |  |
|   | <ul> <li>c. Flight stability augmentation systems:</li> </ul>   | 2.5         | Tanzania civil aviation regulations.                                      |  |
|   | d. Automatic trim systems.  | 3.0         | Theories  |  |
| 7.                                      | Perform final inspections and sign corresponding task cards;  | The<br>expl | person performing this task must be able to<br>ain the following:         |  |
| 8.                                      | Submit task cards to the certification  | 3.1         | Basic methods of aircraft maintenance;                                    |  |
|   | engineer for certification and aircraft   | 3.2         | Human factors in maintenance processes;                                   |  |
| 0                                       | Postore the size of to its normal state   | 3.3         | Analysis methods of fault trees;  |  |
| 9.<br>10                                | Clean the workplace tools and   | 3.4         | Components of an aircraft AFCS;   |  |
| 10.                                     | equipment:  | 3.5         | The overhaul methods of the circuits;                                     |  |
| 11.                                     | Store tools, equipment and safety gear.   | 3.6         | The methods of disassembling and assembling components.                   |  |
| 12.                                     | Observe health, occupational and  |             |   |  |
|   | environmental safety rules and  | 4.0         | Essential Skills  |  |
|   | regulations.  | 4.1         | Fault analysis, prejudgment and prediction competence;                    |  |

|   | 4.2 Engineering technical report writing  |  |  |
|---|---|--|--|
|   | competence;   |  |  |
|   | 4.3 Computer skills;  |  |  |
|   | 4.4 Competence of using tools and equipment;  |  |  |
|   | 4.5 Problem-solving competence;   |  |  |
|   | 4.6 Stress management;  |  |  |
|   | 4.7 Teamwork;   |  |  |
|   | 4.8 Communication skills;   |  |  |
|   | 4.9 Safety responsibility consciousness.  |  |  |
| DESCRIPTION OF THE END<br>PRODUCT / SERVICE | Faults in aircraft AFCS are comprehensively traced<br>and diagnosed in accordance with approved technical<br>specifications and procedures. |  |  |
| CIRCUMSTANTIAL KNOWLEDGE                    | Detailed knowledge about:   |  |  |
|   | 1. Safety operation of equipment and tools;   |  |  |
|   | 2. Occupational health and safety.  |  |  |

| OCCUPATION  | AVIONICS<br>ENGINEER   | MAINTENANCE  | OCCUPATION<br>CODE   |                         |  |  |  |  |  |
|---|--|--|--|-------------------------|--|--|--|--|--|
| DUTY TITLE  | CARRY OUT<br>AERONAUTIO<br>ENGINEERIN  | CARRY OUT MANAGEMENT OF AERONAUTICAL MAINTENANCE ENGINEERING   |  |                         |  |  |  |  |  |
| TASK TITLE  | DEVELOP<br>MAINTENAN   | DEVELOP AIRCRAFT TASK NO. 8031<br>MAINTENANCE PLANS  |  |                         |  |  |  |  |  |
| PERFORMANCE<br>CRITERIA   | The person per<br>maintenance<br>specifications  | erforming this task mus<br>plans in accordance<br>and procedures.  | t be able to develo<br>with approved   | p aircraft<br>technical |  |  |  |  |  |
| RANGE STATEMEN  | <ul> <li>T The task can certified senio</li> <li>The equipment</li> <li>1. Electronic</li> <li>2. Maintena</li> <li>3. Electronic</li> <li>4. Fitter's constant</li> <li>5. Safety geat</li> <li>6. Work beneficier</li> </ul> | <ul> <li>The task can be performed in an AMO under the supervision of certified senior aircraft maintenance engineers or release engineers.</li> <li>The equipment and tools to be used include: <ol> <li>Electronic office equipment;</li> <li>Maintenance literature.</li> <li>Electronics technician's complete tool kit;</li> <li>Fitter's complete tool kit;</li> <li>Safety gear;</li> <li>Work bench.</li> </ol> </li> </ul>  |  |                         |  |  |  |  |  |
|   | EVIDENC  | CE REQUIREMENT   |  |                         |  |  |  |  |  |
| PRACTICAL PERFO   | DRMANCE  | UNDERPINNING KN  | NOWLEDGE   |                         |  |  |  |  |  |
| <ul> <li>The person performin<br/>able to do the followin</li> <li>1. Review airworth<br/>requirements for<br/>the aircraft;</li> </ul>               | g this task must be<br>g:<br>iness maintenance<br>he latest version of   | <b>Detailed knowledge al</b><br><b>1.0 Methods</b><br>The person performin<br>explain how to:  | bout:<br>g this task must be   | e able to               |  |  |  |  |  |
| <ol> <li>Review the regula</li> <li>Comply with t<br/>continuous<br/>maintenance sche</li> <li>Plan the maintenance</li> </ol>                        | tions of TCAA;<br>ne regulations of<br>airworthiness<br>mes;<br>nce resources;   | <ul> <li>1.1 Comply with the f<br/>TCAA;</li> <li>1.2 Comply with the u</li> <li>1.3 Coordinate resour<br/>the maintenance c</li> </ul>  | usage limits of the airces of all parties an osts.   | rcraft;<br>d control    |  |  |  |  |  |
| <ol> <li>Conduct statistics<br/>the usage status o</li> <li>Review the airw<br/>of the aircraft;</li> <li>Review the<br/>airworthiness res</li> </ol> | and monitoring of<br>f aircraft;<br>orthiness standards<br>requirements of<br>riction projects of  | <ul> <li>2.0 Principles</li> <li>The person performine explain the following performine explain the following performance of a state of the performance of the perfor</li></ul> | ng this task must be<br>principles:<br>I regulations;<br>orthiness limitation;<br>control. | e able to               |  |  |  |  |  |

| 8.         | Review relevant maintenance  | 3.0                | Theories  |
|------------|--|--------------------|---|
|            | requirements from manufacturers of<br>engines, auxiliary power units and | The<br>expl        | person performing this task must be able to ain the following:  |
| -          | replacement parts;   | 3.1                | Workflows of maintenance;   |
| 9.<br>9.   | Establish a maintenance plan;<br>Assign responsibilities and duties to   | 3.2                | Types of the airworthiness restriction projects of the aircraft;  |
| 10         | E a bli b  | 3.3                | Methods of maintenance cost control;  |
| 10.        | communication channels;  | 3.4                | Usage methods of maintenance manuals.   |
| 11.        | Promote workplace communication  | 4.0                | Essential Skills  |
|            | staff  | 4.1                | Technical document reading competence;  |
| 12         | Prepare maintenance hudget   | 4.2                | Computer application competence;  |
| 12.        | Observe health occupational and  | 4.3                | Report writing competence;  |
| 15.        | environmental safety rules and   | 4.4                | Teamwork skills;  |
|            | regulations.   | 4.5                | Customer communication service skills;  |
|            |  | 4.6                | Competence of using AMMs.   |
| DES<br>PRC | SCRIPTION OF THE END<br>DDUCT / SERVICE                                  | Dev<br>out<br>spec | elopment of aircraft maintenance plans is carried<br>in accordance with approved technical<br>cifications and procedures. |
| CIR        | CUMSTANTIAL KNOWLEDGE  | Deta               | ailed knowledge about:  |
|            |  | 1.                 | Policies and requirements of developing schemes;  |
|            |  | 2.                 | Scopes of maintenance responsibility;   |
|            |  | 3.                 | Occupational safety and health;   |
|            |  | 4.                 | Scheme management procedures.   |

| OCCUPATION   | AVIONICS<br>ENGINEER   |                 | MAINTENANCE   | OCCUPATION<br>CODE     |             |  |  |
|--|--|-----------------|---|------------------------|-------------|--|--|
| DUTY TITLE   | CARRY OUT MANAGEMENT OF<br>AERONAUTICAL MAINTENANCE<br>ENGINEERING   |                 |   |                        |             |  |  |
| TASK TITLE   | CONDUCT<br>MAINTENAN<br>MANAGEME<br>EVALUATIO  | ICE<br>ENT<br>N | AERONAUTICAL<br>PERSONNEL<br>AND                    | TASK NO.               | 8032        |  |  |
| PERFORMANCE<br>CRITERIA                                      | The person performing this task must be able to conduct aeronautical maintenance personnel management and evaluation in accordance with approved technical specifications and procedures.  |                 |   |                        |             |  |  |
| RANGE STATEMENT  | <ul> <li>The task can be performed in an AMO under the supervision of certified senior aircraft maintenance engineers or release engineers. The equipment and tools to be used include:</li> <li>Maintenance planning offices;</li> <li>Electronic office equipment;</li> <li>Technical document of maintenance.</li> <li>Safety gear</li> </ul> |                 |   |                        |             |  |  |
|  | EVIDEN   | CE I            | REQUIREMENT   |                        |             |  |  |
| PRACTICAL PERFOR   | MANCE  | UN              | DERPINNING KNO                                      | WLEDGE                 |             |  |  |
| The person performing th                                     | is task must be  | Det             | ailed knowledge abou                                | it:                    |             |  |  |
| able to do the following:                                    | •  | 1.0             | Methods   |                        |             |  |  |
| 1. Establish<br>maintenance require<br>latest version of the | airworthiness<br>ements for the<br>aircraft;   | The<br>how      | person performing thi<br>to:<br>Comply with the res | s task must be able to | explain the |  |  |
| 2. Consult the latest reg                                    | gulations of the   | 1.1             | TCAA;   | gulatory requirement   |             |  |  |
| IUAA;  | regulations of   | 1.2             | Comply with the usa                                 | ge limits of the aircr | raft;       |  |  |
| continuous<br>maintenance scheme                             | airworthiness<br>s;  | 1.3             | Coordinate resources maintenance costs.             | of all parties and co  | ntrol the   |  |  |
| 4. Review the airworth                                       | iness standards  | 2.0             | Principles  |                        |             |  |  |
| 5. Review the requ   | uirements of   | The             | person performing thi                               | s task must be able to | explain     |  |  |
| airworthiness restrict                                       | tion projects of   | 2.1             | Aviation rules and re                               | gulations:             |             |  |  |
| the aircraft structure                                       | maintananaa  | 2.2             | Principles of airwort                               | hiness limitation;     |             |  |  |
| requirements for ma  | inufacturers of  | 2.3             | Maintenance manual                                  | s and procedures.      |             |  |  |
| engines, auxiliary po  | ower units and   |                 |   |                        |             |  |  |
| replacement parts;   |  | 3.0             | Theories  |                        |             |  |  |

| 7.         | Assign responsibilities and duties to maintenance personnel; | The the            | person performing this task must be able to explain following:   |
|------------|--|--------------------|--|
| 8.         | Establish interdepartmental                                  | 3.1                | Workflows of maintenance;  |
|            | communication channels;                                      | 3.2                | Types of the airworthiness restriction projects of   |
| 9.         | Promote workplace communication                              |                    | the aircraft;  |
|            | between maintenance personnel;                               | 3.3                | Methods of maintenance regulation interpretation;  |
| 10.        | Conduct on-the-job training for                              | 3.4                | Methods of maintenance manual interpretation;  |
| 11.        | Junior staff<br>Observe health, occupational and             | 3.5                | Knowledge of maintenance procedures and criterion;   |
|            | environmental safety rules and regulations.                  | 3.6                | Query methods of maintenance manuals.  |
|            |  | 4.0                | Essential Skills   |
|            |  | 4.1                | Technical document reading competence;   |
|            |  | 4.2                | Computer application competence;   |
|            |  | 4.3                | Report writing competence;   |
|            |  | 4.4                | Teamwork skills;   |
|            |  | 4.5                | Customer communication service skills;   |
|            |  | 4.6                | AMM inquiry skills.  |
| DES<br>PRO | SCRIPTION OF THE END<br>ODUCT / SERVICE                      | Mar<br>mai<br>with | nagement and evaluation of aeronautical ntenance personnel are performed in accordance approved technical specifications and procedures. |
| CIF        | RCUMSTANTIAL KNOWLEDGE                                       | Det                | ailed knowledge about:   |
|            |  | 1.                 | Policies and requirements of developing schemes;   |
|            |  | 2.                 | Scopes of maintenance responsibility;  |
|            |  | 3.                 | Occupational safety and health;  |
|            |  | 4.                 | Scheme management procedures.  |

| OCCUPATION                | AVIONICS                               | Ν   | AINTENANCE          | OCCUPATION                              |                      |  |  |  |
|---------------------------|--|---|---------------------|---|----------------------|--|--|--|
|                           | ENGINEER                               | ENGINEER CODE   |                     |   |                      |  |  |  |
| DUTY TITLE                | CARRY OUT MANAGEMENT OF DUTY NO. 803   |   |                     |   |                      |  |  |  |
|                           | AERONAUTICAL MAINTENANCE               |   |                     |   |                      |  |  |  |
|                           |  | <b>FX</b> 7 A   |                     |   | 0022                 |  |  |  |
| IASK IIILE                | FACILITIES/TO                          | EVA<br>DLS  | LUATE PLANT<br>AND  | IASK NO.                                | 8033                 |  |  |  |
|                           | DEVICES/EQUI                           | PMEN  | ЛТ                  |   |                      |  |  |  |
| PERFORMANCE               | The person perfo                       | rming   | g this task must be | able to manage an                       | d evaluate           |  |  |  |
| CRITERIA                  | plant facilities/t                     | ools  | and devices/equi    | ipment in accorda                       | ance with            |  |  |  |
|                           | approved technic                       | al spe  | ecifications and pr | ocedures.                               |                      |  |  |  |
| RANGE STATEMENT           | The task can be certified senior a     | perf<br>ircraf  | ormed in an AM      | O under the supe gineers or release end | rvision of ngineers. |  |  |  |
|                           | The equipment a                        | nd too  | ols to be used incl | ude:                                    |                      |  |  |  |
|                           | 1. Maintenance                         | e plan  | ning offices;       |   |                      |  |  |  |
|                           | 2. Electronic office equipment;        |   |                     |   |                      |  |  |  |
|                           | 3. Technical document of maintenance;  |   |                     |   |                      |  |  |  |
|                           | 4. Tools and equipment;                |   |                     |   |                      |  |  |  |
|                           | 5. Aviation materials and consumables; |   |                     |   |                      |  |  |  |
|                           | 6. Transportati                        | on eq   | uipment.            |   |                      |  |  |  |
|                           | 7. Safety gear                         |   |                     |   |                      |  |  |  |
|                           | EVIDENCE                               | RE  | QUIREMENT           |   |                      |  |  |  |
| PRACTICAL PERFORM         | MANCE                                  | UN  | DERPINNING K        | NOWLEDGE                                |                      |  |  |  |
| The person performing thi | s task must be able                    | Det   | ailed knowledge     | about:                                  |                      |  |  |  |
| to do the following:      | ng of TCAA.                            | 1.0   | Methods             |   |                      |  |  |  |
| 2 Comply with the         | regulations of                         | The person performing this task must be able to explain how to: |                     |   | be able to           |  |  |  |
| continuous airworthi      | ness maintenance                       | 1.1   | Comply with the     | e regulatory requir                     | ements of            |  |  |  |
| schemes;                  |  |   | the TCAA;           |   |                      |  |  |  |
| 3. Review plant facility  | requirements;                          | 1.2   | Comply with the     | usage limits of the                     | aircraft;            |  |  |  |
| 4. Review the mainte      | nance tools and                        | 1.3   | Coordinate resou    | rces of all parties a                   | nd control           |  |  |  |
| 5 Poviow rolovont         | nts of the aircraft;                   |   | the maintenance     | costs.                                  |                      |  |  |  |
| requirements of avia      | tion equipment;                        | 2.0   | Principles          |   |                      |  |  |  |
| 6. Review the above equ   | ipment, tools and                      | The   | person performi     | ng this task must I                     | be able to           |  |  |  |
| other documents;          |  | expl  | lain the following  | principles:                             |                      |  |  |  |
| 7. Assign responsibilit   | ies and duties to                      | 2.1   | Aviation rules ar   | nd regulations;                         |                      |  |  |  |
| maintenance personn       | el;                                    | 2.2   | Principles of airv  | worthiness limitation                   | on.                  |  |  |  |

| communication channels;   | 3.0 Theories  |  |  |  |
|---|---|--|--|--|
| 9. Promote workplace communication between maintenance personnel;   | The person performing this task must be able to explain the following:  |  |  |  |
| <ol> <li>Conduct on-the-job training for junior<br/>staff;</li> <li>Establish tools and equipment<br/>database;</li> <li>Establish tools and equipment movement<br/>management system.</li> <li>Observe health, occupational and<br/>environmental safety rules and<br/>regulations.</li> </ol> | <ul> <li>3.1 Process flows of maintenance;</li> <li>3.2 Types of the airworthiness restriction projects of the aircraft;</li> <li>3.3 Methods of maintenance regulation interpretation;</li> <li>3.4 Query methods of maintenance manuals.</li> <li>4.0 Essential Skills</li> <li>4.1 Technical document reading competence;</li> <li>4.2 Computer application competence;</li> <li>4.3 Report writing competence;</li> <li>4.4 Teamwork skills;</li> </ul> |  |  |  |
|   | <ul><li>4.5 Customer communication service skills;</li><li>4.6 AMM inquiry skills.</li></ul>  |  |  |  |
| DESCRIPTION OF THE END<br>PRODUCT / SERVICE   | Management and evaluation of plant facilities/tools<br>and devices/equipment is carried out in accordance<br>with approved technical specifications and<br>procedures.  |  |  |  |
| CIRCUMSTANTIAL KNOWLEDGE  | Detailed knowledge about:   |  |  |  |
|   | <ol> <li>Policies and requirements of developing<br/>schemes;</li> <li>Scopes of maintenance responsibility;</li> <li>Occupational safety and health;</li> <li>Scheme management procedures.</li> </ol>   |  |  |  |

| OCCUPATION   | AVIONICS<br>ENGINEER   | MAINTENANCE   | OCCUPATION<br>CODE   |  |  |  |  |  |  |
|--|--|---|--|--|--|--|--|--|--|
| DUTY TITLE   | CARRY OUT MANAGEMENT OF<br>AERONAUTICAL MAINTENANCE<br>ENGINEERING   |   |  |  |  |  |  |  |  |
| TASK TITLE   | IMPLEMENT<br>MAINTENANCE   | IMPLEMENTPREPARATIONOFTASK NO.8034MAINTENANCESCHEMES  |  |  |  |  |  |  |  |
| PERFORMANCE<br>CRITERIA  | The person performing this task must be able to implement preparation<br>of maintenance schemes in accordance with approved technical<br>specifications and procedures.  |   |  |  |  |  |  |  |  |
| RANGE STATEMENT  | <ul> <li>The task can be performed in an AMO under the supervision of certified senior aircraft maintenance engineers or release engineers.</li> <li>The equipment and tools to be used include: <ol> <li>Maintenance planning offices;</li> <li>Electronic office equipment;</li> <li>Technical document of maintenance.</li> </ol> </li> </ul> |   |  |  |  |  |  |  |  |
| EVIDENCE REQUIREMENT   |  |   |  |  |  |  |  |  |  |
| PRACTICAL PERFORMANCE UNDERPINNING KNOWLEDGE   |  |   |  |  |  |  |  |  |  |
| <ol> <li>The person performing thi<br/>to do the following:</li> <li>Consult the latest<br/>maintenance review<br/>aircraft;</li> <li>Review all the applic<br/>directives and service<br/>the aircraft;</li> <li>Review the rea<br/>airworthiness restrict<br/>aircraft structure;</li> <li>Review relevant<br/>requirements for realized<br/>engines, auxiliary preplacement parts;</li> <li>Review the historica<br/>projected service cha<br/>aircraft;</li> </ol> | s task must be able<br>version of the<br>reports of the<br>able airworthiness<br>announcement of<br>equirements of<br>ion projects of the<br>maintenance<br>manufacturers of<br>power units and<br>l usage status and<br>aracteristics of the  | <ul> <li>Detailed knowledge a</li> <li>1.0 Methods</li> <li>The person performing explain how to:</li> <li>1.1 Review the resour maintenance sche</li> <li>2.0 Principles</li> <li>The person performing explain the following p</li> <li>2.1 Aircraft using print</li> <li>2.2 Aircraft initial air</li> <li>2.3 Aviation rules and</li> <li>3.0 Theories</li> <li>The person performing explain the following:</li> </ul> | bout:<br>g this task must be<br>ces of all parties and<br>mes.<br>g this task must be<br>principles:<br>nciples;<br>worthiness criterio<br>d regulations.<br>g this task must be | e able to<br>I develop<br>e able to<br>n;<br>e able to |  |  |  |  |  |
| 6. Review the competent engineering manager operators;   | nce of maintenance<br>nent of the aircraft   | <ul><li>3.1 Preparation metho</li><li>3.2 Approval processor</li></ul>  | ods of maintenances  | schemes;<br>schemes;                                   |  |  |  |  |  |

| 7.  | Review the policies and requirements of the TCAA on maintenance schemes; | 3.3 A<br>li                 | irworthiness management and airworthiness mitation types;  |
|---|--|-----------------------------|--|
| 8.  | Organize the preparation, adjustment<br>and optimization of maintenance  | 3.4 U<br>do                 | Using methods of aircraft maintenance ocuments;  |
| 9.  | schemes.<br>Observe health. occupational and                             | 3.5 H                       | Iuman factors in aeronautical maintenance.   |
|   | environmental safety rules and   | 4.0 E                       | Ssential Skills  |
|   | regulations.   | 4.1 T                       | echnical document reading competence;  |
|   |  | 4.2 C                       | Computer application competence;   |
|   |  | 4.3 R                       | eport writing competence;  |
|   |  | 4.4 T                       | eamwork skills;  |
|   |  | 4.5 C                       | Customer communication service skills.   |
| DESCRIPTION OF THE END<br>PRODUCT / SERVICE |  | Mainte<br>prepar<br>specifi | enance schemes for various aircraft are<br>red in accordance with approved technical<br>ications and procedures. |
| CIRCUMSTANTIAL KNOWLEDGE                    |  | Detailed knowledge about:   |  |
|   |  | 1. Po                       | olicies and requirements of developing chemes;   |
|   |  | 2. S                        | copes of maintenance responsibility;   |
|   |  | 3. O                        | Occupational safety and health;  |
|   |  | 4. Se                       | cheme management procedures.   |

| OCCUPATION   | AVIONICS<br>ENGINEER  |  | MAINTENANCE   | OCCUPATION<br>CODE  |                        |  |  |  |
|--|---|--|---|---|------------------------|--|--|--|
| DUTY TITLE   | CARRY OUT MANAGEMENT OF <b>DUTY NO.</b> 803<br>AERONAUTICAL MAINTENANCE<br>ENGINEERING  |  |   |   |                        |  |  |  |
| TASK TITLE   | PERFORM<br>MANAGEMEN<br>DEVELOPMEN  | TI<br>VT                                       | RELIABILITY<br>AND SCHEME   | TASK NO.  | 8035                   |  |  |  |
| PERFORMANCE<br>CRITERIA  | The person per<br>management ar<br>technical specif   | form<br>nd scl<br>ficatio                      | ing this task must be<br>neme development in<br>ons and procedures.   | e able to perform r<br>n accordance with a                                    | eliability<br>approved |  |  |  |
| RANGE<br>STATEMENT   | <ul> <li>The task can be performed in an AMO under the supervision of certified senior aircraft maintenance engineers or release engineers.</li> <li>The equipment and tools to be used include: <ol> <li>Maintenance planning offices;</li> <li>Electronic office equipment;</li> <li>Technical document of maintenance.</li> <li>Safety gear</li> </ol> </li> </ul> |  |   |   |                        |  |  |  |
| PRACTICAL PERFOR   | RMANCE  | UNI  | DERPINNING KNC  | WLEDGE  |                        |  |  |  |
|  |   |  |   |   |                        |  |  |  |
| <ul> <li>The person performing t<br/>able to do the following:</li> <li>1. Review the releva<br/>requirements of<br/>authorities;</li> <li>2. Establish aircra<br/>management<br/>including:</li> <li>a. Collect system</li> </ul> | his task must be<br>nt policies and<br>the related<br>ft reliability<br>mechanisms,<br>data;  | Deta<br>1.0<br>The<br>how<br>1.1<br>1.2<br>2.0 | ailed knowledge abo<br>Methods<br>person performing th<br>to:<br>Analyze and adjust to<br>Investigate and rev<br>aircraft and reliabili | ut:<br>is task must be able t<br>resource data;<br>view related engine<br>ty. | o explain<br>eering of |  |  |  |

| 4. Observe health, occupational and | 3.1 Data acquisition methods;                       |
|-------------------------------------|---|
| environmental safety rules and      | 3.2 Data statistic and analysis methods;            |
| regulations.                        | 3.3 Engineering investigation methods;              |
|                                     | 3.4 Airworthiness limitation types.                 |
|                                     |   |
|                                     | 4.0 Essential Skills                                |
|                                     | 4.1 Technical document reading competence;          |
|                                     | 4.2 Computer application competence;                |
|                                     | 4.3 Report writing competence;                      |
|                                     | 4.4 Teamwork skills;                                |
|                                     | 4.5 Customer communication service skills.          |
| DESCRIPTION OF THE END              | RELIABILITY MANAGEMENT AND SCHEME                   |
| PRODUCT / SERVICE                   | DEVELOPMENT are conducted in accordance with        |
|                                     | approved technical specifications and procedures.   |
| CIRCUMSTANTIAL KNOWLEDGE            | Detailed knowledge about:                           |
|                                     | 1. Policies and requirements of developing schemes; |
|                                     | 2. Scopes of maintenance responsibility;            |
|                                     | 3. Occupational safety and health;                  |
|                                     | 4. Scheme management procedures.                    |

| οςςι   | UPATION  | AVIONICS<br>ENGINEER   | MA  | AINTENANCE   | OCCUPATION<br>CODE                                       |                          |  |
|--|--|--|---|--|--|--------------------------|--|
| DUTY   | TITLE  | CARRY OUT M<br>AERONAUTICAL<br>ENGINEERING   | ANA<br>MA                                     | GEMENT OF<br>AINTENANCE                                      | DUTY NO.   | 803                      |  |
| TASK   | TITLE  | CONDUCTQUALITYCONTROLTASK NO.8036ANDEVALUATIONOFAERONAUTICALMAINTENANCE  |   |  |  |                          |  |
| PERF<br>CRIT   | ORMANCE<br>ERIA  | The person perform<br>and evaluation of<br>approved technical  | ning t<br>faer<br>lspec                       | his task must be a<br>conautical maint<br>difications and pr | able to conduct qual<br>cenance in accorda<br>cocedures. | ity control<br>ance with |  |
| RANG   | GE STATEMENT   | <ul> <li>The task can be performed in an AMO under the supervision of certified senior aircraft maintenance engineers or release engineers.</li> <li>The equipment and tools to be used include: <ol> <li>Maintenance planning offices;</li> <li>Electronic office equipment;</li> <li>Technical document of maintenance.</li> </ol> </li> </ul> |   |  |  |                          |  |
| EVIDENCE REQUIREMENT   |  |  |   |  |  |                          |  |
| PRACTICAL PERFORMANCE U  |  |  | UN  | UNDERPINNING KNOWLEDGE                                       |  |                          |  |
| The perturbative to do to the to the to the termination of te | erson performing thi<br>the following:<br>Review airworthines<br>naintenance for the l     | s task must be able<br>as requirements of<br>atest version of the  | Deta<br>1.0<br>The<br>expl                    | ailed knowledge<br>Methods<br>person perform<br>ain how to:  | e <b>about:</b><br>ing this task must                    | be able to               |  |
| a:<br>2. R<br>3. R<br>th   | ircraft;<br>Review the regulation<br>Review the airworth<br>he aircraft;                   | ns of TCAA;<br>iness standards of  | 1.1<br>1.2                                    | Develop, evalu<br>maintenance qu<br>Manage mainte            | ate, supervise, and mality;<br>mance teams.              | review the               |  |
| 4. R<br>5. Ir<br>6. N  | Review maintenance<br>nvestigate maintenan<br>Manage maintenance                           | quality;<br>nce quality;<br>safety;  | <b>2.0</b><br>The expl                        | <b>Principles</b><br>person perform<br>ain the followin      | ing this task must<br>g principles:                      | be able to               |  |
| 7. A<br>d<br>8. D<br>m   | Assign suitable re-<br>luties to relevant per<br>Develop evaluatio<br>maintenance quality; | sponsibilities and<br>sonnel;<br>n schemes of  | <ul><li>2.1</li><li>2.2</li><li>3.0</li></ul> | Management of<br>Control of main                             | f maintenance team<br>ntenance safety.                   | s;                       |  |
| 9. C   | Drganize the semplementation of ma   | supervision and<br>aintenance quality;   | The   | person perform<br>ain the followin                           | ing this task must<br>g:                                 | be able to               |  |
| 10. 0  | ngamze rerevant m  | countrys to evaluate   | 3.1   | Workflows of r   | nanagers;  |                          |  |
| 11. Observe health, occupational and        | 3.2 Aircraft airworthiness criterion;   |
|---|---|
| environmental safety rules and              | 3.3 Procedures and methods of maintenance   |
| regulations.                                | standards.  |
|   |   |
|   | 4.0 Essential Skills  |
|   | 4.1 Technical document reading competence;  |
|   | 4.2 Computer application competence;  |
|   | 4.3 Report writing competence;  |
|   | 4.4 Teamwork skills;  |
|   | 4.5 Supervisory skills.   |
| DESCRIPTION OF THE END<br>PRODUCT / SERVICE | QUALITY CONTROLAND EVALUATIONOFAERONAUTICALMAINTENANCEareconducted in accordancewith approved technicalspecifications and procedures. |
| CIRCUMSTANTIAL KNOWLEDGE                    | Detailed knowledge about:   |
|   | 1. Policies and requirements of developing schemes;   |
|   | 2. Scopes of maintenance responsibility;  |
|   | 3. Occupational safety and health;  |
|   | 4. Scheme management procedures.  |

| OCCUPATIO   | N AVIO<br>ENG  | ONICS<br>INEER   | M   | AINTENANCE   | OCCUPATION<br>CODE  |                         |
|---|--|--|---|--|---|-------------------------|
| DUTY TITLE  | CAR<br>AER<br>ENG  | RY OUT M<br>ONAUTICAL<br>INEERING  | ANA<br>, MA   | GEMENT OF<br>AINTENANCE  | DUTY NO.  | 803                     |
| TASK TITLE  | CAR<br>MAI   | CARRY OUT AERONAUTICALTASK NO.8037MAINTENANCE COST CONTROL8037   |   |  |   | 8037                    |
| PERFORMAN<br>CRITERIA   | NCE The main spect   | The person performing this task must be able to carry out aeronautical maintenance cost control in accordance with approved technical specifications and procedures.   |   |  |   |                         |
| RANGE STAT  | <b>TEMENT</b> The certination           The certination         1.           1.         2.           3.         4.           5.         6.           7. Satisfies         5. | <ul> <li>The task can be performed in an AMO under the supervision of certified senior aircraft maintenance engineers or release engineers.</li> <li>The equipment and tools to be used include: <ol> <li>Maintenance planning offices;</li> <li>Electronic office equipment;</li> <li>Technical document of maintenance;</li> <li>Tools and equipment;</li> <li>Aviation materials and consumables;</li> <li>Transportation equipment.</li> </ol> </li> </ul> |   |  |   |                         |
| EVIDENCE REQUIREMENT  |  |  |   |  |   |                         |
| PRACTICAL PERFORMANCE UNDERPINNING KNOWLEDGE  |  |  |   |  |   |                         |
| The person performing this task must be able to do the following:   |  | must be able   | Deta<br>1.0   | ailed knowledge<br>Methods   | about:  |                         |
| <ol> <li>Review the regulations of TCAA;</li> <li>Comply with the regulations of continuous airworthiness maintenance schemes;</li> </ol> |  | CCAA;<br>ulations of<br>maintenance  | <ul> <li>The person performing this task must be able to explain how to:</li> <li>1.1 Comply with the regulatory requirements of the TCAA:</li> </ul> |  | e able to<br>ements of  |                         |
| <ol> <li>Review<br/>resources;</li> <li>Conduct s<br/>usage stat</li> </ol>   | the planned<br>tatistics and moni<br>us of aircraft;   | planned maintenance<br>cs and monitoring of the<br>ircraft;  |   | Comply with the Coordinate resort the maintenance  | e usage limits of the<br>urces of all parties ar<br>e costs.  | aircraft;<br>nd control |
| <ol> <li>Review<br/>airworthin<br/>aircraft str</li> <li>Review<br/>requireme<br/>auxiliary<br/>manufactu</li> </ol>                      | the requires<br>tess restriction pro-<br>ructure;<br>relevant<br>nts for companies<br>power units<br>tring;  | ments of<br>ojects of the<br>maintenance<br>s of engines,<br>and parts   | <ul> <li>2.0</li> <li>The expl</li> <li>2.1</li> <li>2.2</li> <li>2.3</li> </ul>  | <b>Principles</b><br>person performination the following<br>Aviation rules a<br>Aircraft initial a<br>Aviation rules a | ing this task must b<br>g principles:<br>nd regulations;<br>hirworthiness criterio<br>nd regulations. | e able to<br>on;        |

| 7.  | Review the status of equipment,                                    |  |
|-----|--|--|
|     | devices, tools and documents;                                      | 3.0 Theories   |
| 8.  | Assign suitable responsibilities and duties to relevant personnel; | The person performing this task must be able to explain the following:   |
| 9.  | Communicate with and coordinate                                    | 3.1 Workflows of maintenance;  |
|     | interactions between relevant<br>departments to promote the        | 3.2 Types of the airworthiness restriction projects of the aircraft;   |
|     | development and implementation of work.                            | 3.3 Methods of maintenance regulation interpretation;  |
| 10. | Observe health, occupational and                                   | 3.4 Methods of maintenance manual  |
|     | environmental safety rules and                                     | interpretation;  |
|     | regulations.   | 3.5 Principles of maintenance cost control.  |
|     |  |  |
|     |  | 4.0 Essential Skills   |
|     |  | 4.1 Technical document reading competence;   |
|     |  | 4.2 Computer application competence;   |
|     |  | 4.3 Report writing competence;   |
|     |  | 4.4 Teamwork skills;   |
|     |  | 4.5 Customer communication service skills;   |
|     |  | 4.6 AMM inquiry skills.  |
| DE  | SCRIPTION OF THE END   | AERONAUTICAL MAINTENANCE COST  |
| PR  | ODUCT / SERVICE  | CONTROL is conducted in accordance with  |
|     |  | approved technical specifications and procedures.  |
| CIE | RCUMSTANTIAL KNOWLEDGE   | Detailed knowledge about:  |
|     |  |  |
|     |  | 1. Policies and requirements of developing schemes;  |
|     |  | <ol> <li>Policies and requirements of developing<br/>schemes;</li> <li>Scopes of maintenance responsibility;</li> </ol>  |
|     |  | <ol> <li>Policies and requirements of developing<br/>schemes;</li> <li>Scopes of maintenance responsibility;</li> <li>Occupational safety and health;</li> </ol> |

| OCCUPATION              | AVIONICS MAINTENANCE<br>ENGINEER   | OCCUPATION<br>CODE   |  |  |  |  |  |
|-------------------------|--|--|--|--|--|--|--|
| DUTY TITLE              | CONDUCT FAULT DIAGNOSIS AND<br>SYSTEM RELIABILITY ANALYSISDUTY NO.804  |  |  |  |  |  |  |
| TASK TITLE              | CONDUCT FAULT DIAGNOSIS AND<br>MAINTENANCE OF ELECTRONIC<br>COMPONENTS   | CONDUCT FAULT DIAGNOSIS AND<br>MAINTENANCE OF ELECTRONIC<br>COMPONENTSTASK NO.8041 |  |  |  |  |  |
| PERFORMANCE<br>CRITERIA | The person performing this task must be able to conduct fault diagnosis<br>and maintenance of aircraft electronic components in accordance with<br>approved technical specifications and procedures. |  |  |  |  |  |  |
| RANGE<br>STATEMENT      | The task can be performed in an AMO under the supervision of certified senior aircraft maintenance engineers or release engineers.   |  |  |  |  |  |  |
|                         | Ine equipment and tools to be used inclu   | de:  |  |  |  |  |  |
|                         | Equipment and tools:   | f integrated circuit:  |  |  |  |  |  |
|                         | <ol> <li>Special test believes and test tools of</li> <li>Personal protective equipment:</li> </ol>  | r megrated encurt,   |  |  |  |  |  |
|                         | <ol> <li>Computers with accessories</li> </ol>   |  |  |  |  |  |  |
|                         | <ol> <li>Electronics technician's complete tool kit;</li> </ol>  |  |  |  |  |  |  |
|                         | 4. Digital multimeters;  |  |  |  |  |  |  |
|                         | 5. Oscilloscopes;  |  |  |  |  |  |  |
|                         | 6. Heat guns;  |  |  |  |  |  |  |
|                         | 7. Anti-static wrist straps;   |  |  |  |  |  |  |
|                         | 8. Soldering guns;   |  |  |  |  |  |  |
|                         | 9. Crimping tools and connector pick-up and delivery tools;  |  |  |  |  |  |  |
|                         | 10. Safety gear;   |  |  |  |  |  |  |
|                         | 11. Work bench.  |  |  |  |  |  |  |
|                         | Materials:   |  |  |  |  |  |  |
|                         | 1. Resistors, capacitors and other elect   | ronic components;  |  |  |  |  |  |
|                         | 2. Contact cleaners;   |  |  |  |  |  |  |
|                         | 3. Contact enhancers;  |  |  |  |  |  |  |
|                         | 4. Electrical jointing;  |  |  |  |  |  |  |
|                         | 5. Wires;  |  |  |  |  |  |  |
|                         | 6. Welding materials;  |  |  |  |  |  |  |
|                         | 7. Heat shrinkable sleeves;  |  |  |  |  |  |  |
|                         | 8. Sealants and solvents.  |  |  |  |  |  |  |
|                         | EVIDENCE REQUIREMENT   |  |  |  |  |  |  |

| PRACTICAL PERFORMANCE   | UNDERPINNING KNOWLEDGE  |  |
|---|---|--|
| The person performing this task must be able to do the following:   | Detailed knowledge about:<br>1.0 Methods  |  |
| <ul> <li>Perform the following:</li> <li>1. Select tools, equipment and safety gear;</li> <li>2. Observe health and safety regulations;</li> <li>3. Assign responsibilities and duties to maintenance personnel;</li> <li>4. Develop fault diagnosis and maintenance plans for aircraft electronic components;</li> </ul> | <ul> <li>The person performing this task must be able to explain how to:</li> <li>1.1 Perform fault detection of aircraft electronic components;</li> <li>1.2 Specify the fault maintenance plans of aircraft electronic components.</li> <li>2.0 Principles</li> </ul> |  |
| 5. Organize the implementation of fault diagnosis and isolation maintenance of aircraft electronic components;  | <ul><li>The person performing this task must be able to explain the following principles:</li><li>2.1 Measurement principles of component</li></ul>   |  |
| 6. Organize team members to prepare for production;   | <ul><li>performance indicators;</li><li>2 2 Working principles of control components</li></ul>  |  |
| 7. Promote the conduct and implementation of work;  | 3.0 Theories  |  |
| <ol> <li>Evaluate results;</li> <li>Establish an effective incentive mechanism:</li> </ol>  | The person performing this task must be able to explain the following:  |  |
| <ol> <li>Prepare maintenance budget;</li> <li>Control maintenance costs;</li> </ol>   | <ul><li>3.1 Identification mode of electronic components;</li><li>3.2 Measurement methods for electronic components.</li></ul>  |  |
| <ul> <li>12. Conduct fault diagnosis and maintenance of the following aircraft electronic components:</li> <li>a. Connectors switch capacitors and other electronic components;</li> <li>b. Integrated circuit modules.</li> </ul>  | <ul> <li>4.0 Essential Skills</li> <li>4.1 Computer skills;</li> <li>4.2 Critical thinking;</li> <li>4.3 Problem-solving competence;</li> </ul>   |  |
| 13. Isolate faults according to detected states;  | <ul><li>4.4 Stress management;</li><li>4.5 Teamwork;</li></ul>  |  |
| 14. Check for normality after fault isolation:  | 4.6 Communication skills;   |  |
| <ul><li>15. Analyze the principles of faults;</li><li>16. Query the connection schematic diagrams of aircraft electronic circuits;</li></ul>  | 4./ Safety responsibility consciousness.  |  |
| <ol> <li>Analyze aircraft electronic components<br/>that may have faults;</li> <li>Replace faulty electronic components<br/>or assemblies:</li> </ol>   |   |  |

| 19. Perform relevant functional tests.   |   |
|--|---|
| 20. Observe health, occupational and environmental safety rules and regulations. |   |
| DESCRIPTION OF THE END<br>PRODUCT / SERVICE                                      | Fault diagnosis and maintenance of electronic components are conducted in accordance with approved technical specifications and procedures. |
| CIRCUMSTANTIAL KNOWLEDGE   | Detailed knowledge about:   |
|  | 1. Safety operation of equipment and tools;   |
|  | 2. Occupational safety and health.  |

| OCCUPATION   | AVIONICS<br>ENGINEER   | MAINTENANCE  | OCCUPATION<br>CODE                    |  |  |
|--|--|--|---------------------------------------|--|--|
| DUTY TITLE   | CONDUCT FAUL<br>SYSTEM RELIAB  | T DIAGNOSIS AND<br>ILITY ANALYSIS  | DUTY NO.                              | 804  |  |
| TASK TITLE   | PERFORM INTE<br>TRACING AND<br>AIRBORNE ELEC   | PERFORMINTEGRATEDFAULTTASK NO.8042TRACINGANDDIAGNOSISOFAIRBORNEELECTRONICCIRCUITSImage: Circuit State St |                                       |  |  |
| PERFORMANCE<br>CRITERIA  | The person performing this task must be able to perform integrated fault tracing and diagnosis of airborne electronic circuits in accordance with approved technical specifications and procedures.  |  |                                       |  |  |
| RANGE<br>STATEMENT   | <ul> <li>The task can be performed in an AMO under the supervision of certified senior aircraft maintenance engineers or release engineers.</li> <li>The equipment and tools to be used include: <ol> <li>Maintenance documents;</li> <li>Electronics technician's complete tool kit</li> <li>Computer with accessories;</li> <li>Aviation materials and consumables;</li> <li>Transportation equipment;</li> <li>Safety gear;</li> <li>Work bench</li> <li>Multimeters</li> <li>Oscilloscope</li> </ol> </li> </ul> |  |                                       |  |  |
|  | EVIDENCE REQUIREMENT   |  |                                       |  |  |
| PRACTICAL PERFO  | RMANCE   | UNDERPINNING 1   | KNOWLEDGE                             |  |  |
| The person performing  | his task must be able  | Detailed knowledge   | about:                                |  |  |
| <ol> <li>to do the following:</li> <li>Select the tools, equipment and safety gear;</li> <li>Observe health and safety regulations;</li> <li>Assign responsibilities and duties to maintenance personnel;</li> <li>Develop maintenance plans for integrated faults of aircraft electronic circuits;</li> </ol> |  | <ul> <li>The person performing this task must be able to explain how to:</li> <li>1.1 Detect the faults of electronic circuits;</li> <li>1.2 Query the connection schematic diagrams or aircraft electronic circuits;</li> <li>1.3 Analyze the possible locations of the faul points on the aircraft electronic circuits.</li> </ul>   |                                       | be able to<br>its;<br>agrams of<br>the fault<br>cuits. |  |
| 5. Organize the<br>integrated fault<br>implementation<br>maintenance of<br>circuits;   | mplementation of<br>analysis and the<br>of isolation<br>aircraft electronic  | <b>2.0 Principles</b><br>The person perform explain the following  | ing this task must t<br>g principles: | be able to   |  |

| 6.        | Organize team members to prepare for production; | 2.1          | Working principles of aircraft electronic circuits; |
|-----------|--|--------------|---|
| 7.        | Promote the conduct and implementation of work;  | 2.2          | Using principles of manuals.                        |
| 8.        | Establish an effective incentive                 | 3.0          | Theories  |
| 0         | mechanism;                                       | The          | person performing this task must be able to         |
| 9.<br>10  | Control maintenance costs;                       | expl         | ain the following:                                  |
| 10.       | for fault diagnosis of analog circuits.          | 3.1          | The fault diagnosis methods of aircraft             |
|           | including but not limited to the                 | 32           | The methods of electronic circuit                   |
|           | following detection methods:                     | 5.2          | measurement.  |
|           | a. Dictionary methods of electronic              |              |   |
|           | b Electronic circuits based on neural            | 4.0          | Essential Skills                                    |
|           | networks.  | 4.1          | Computer skills;                                    |
| 11.       | Isolate faults according to detected             | 4.2          | Critical thinking;                                  |
| 10        | states;  | 4.3          | Problem-solving competence;                         |
| 12.       | Check for normality after fault isolation;       | 4.4          | Stress management;                                  |
| 13.<br>14 | Analyze the principles of faults;                | 4.5          | Teamwork;   |
| 14.       | diagrams of aircraft electronic circuits;        | 4.6          | Communication skills;                               |
| 15.       | Analyze the possible locations of the            | 4./          | Safety responsibility consciousness.                |
|           | fault points on the aircraft electronic          |              |   |
| 16        | circuits;  |              |   |
| 10.       | Eollow safety precautions for circuit            |              |   |
| 17.       | construction.                                    |              |   |
| 18.       | Observe health, occupational and                 |              |   |
|           | regulations.                                     |              |   |
| DES       | SCRIPTION OF THE END                             | Faul         | It diagnosis and maintenance of airborne            |
| PRO       | DDUCT / SERVICE                                  | elec<br>with | tronic circuits are conducted in accordance         |
|           |  | proc         | cedures.  |
| CIR       | CUMSTANTIAL KNOWLEDGE                            | Deta         | ailed knowledge about:                              |
|           |  | 1.           | Safety operation of equipment and tools;            |
|           |  | 2.           | Occupational safety and health.                     |

| OCCUPATION   | AVIONICS<br>ENGINEER  | M   | AINTENANCE  | OCCUPATION<br>CODE   |            |
|--|---|---|---|--|------------|
| DUTY TITLE   | CONDUCT FAULT<br>SYSTEM RELIABI   | Г DIA<br>LITY   | GNOSIS AND<br>ANALYSIS                                  | DUTY NO.   | 804        |
| TASK TITLE   | CARRY OUT INTEGRATED FAULT<br>TRACING AND DIAGNOSIS OF<br>AIRBORNE ELECTRICAL CIRCUITSTASK NO.8043  |   |   | 8043   |            |
| PERFORMANCE<br>CRITERIA  | The person performing this task must be able to conduct integrated fault tracing and diagnosis of airborne electrical circuits in accordance with approved technical specifications and procedures.   |   |   |  |            |
| RANGE<br>STATEMENT   | <ul> <li>The task can be performed in an AMO under the supervision of certified senior aircraft maintenance engineers or release engineers.</li> <li>The equipment and tools to be used include: <ol> <li>Maintenance documents</li> <li>Computers with accessories;</li> <li>Electronics technician's complete tool kit;</li> <li>Safety gear;</li> <li>Aviation materials and consumables;</li> <li>Work bench</li> </ol> </li> </ul> |   |   |  |            |
|  | EVIDENCE  | REQ   | UIREMENT  |  |            |
| PRACTICAL PERFOR   | MANCE   | UNI   | DERPINNING  | KNOWLEDGE  |            |
| The person performing this task must be able to do the following:  |   | Deta  | ailed knowledge<br>Methods                              | e about:   |            |
| <ol> <li>Select tools, equipment and safety gear;</li> <li>Follow health and safety precautions<br/>when performing the task;</li> <li>Assign responsibilities and duties to<br/>maintenace personnel;</li> </ol>  |   | <ul> <li>The person performing this task must be able to explain how to:</li> <li>1.1 Detect the faults of electrical circuits;</li> <li>1.2 Query the connection schematic diagrams of the simulated performance of the simulation of the simulation</li></ul> |   | be able to<br>its;<br>agrams of  |            |
| 4. Develop maintena<br>integrated faults of<br>circuits;   | ance plans for<br>aircraft electrical   | <ul> <li>1.3 Analyze the possible locations of the fapoints on the aircraft electrical circuits.</li> </ul>   |   | the fault the fa |            |
| 5. Organize the in<br>integrated fault a<br>implementation of iso<br>of aircraft electrical  | nplementation of<br>analysis and the<br>plation maintenance<br>circuits;  | 2.0<br>The expl   | <b>Principles</b><br>person perform<br>ain the followin | ing this task must b<br>g principles:  | be able to |
| <ol> <li>Organize team membrane</li> <li>work;</li> <li>Promote the second second</li></ol> | ers for maintenance   | 2.1<br>2.2  | Connection pri<br>circuits;<br>Using principle          | s of manuals.  | electrical |
| <ul> <li>7. Promote the conduct<br/>of work;</li> <li>8 Evaluate results:</li> </ul>   | and implementation  | 3.0   | Theories  |  |            |

| 9. Establish an effective incentive mechanism; | The person performing this task must be able to explain the following:   |
|--|--|
| 10. Control maintenance costs;                 | 3.1 The fault diagnosis methods of aircraft  |
| 11. Conduct comprehensive fault detection      | electrical circuits;   |
| of aircraft electrical circuits, including     | 3.2 The methods of electrical circuit  |
| but not limited to the following methods:      | measurement;   |
| a. Manual inquiry methods;                     | 3.3 The layout of aircraft electrical circuits.  |
| b. Backwards methods for aircraft              |  |
| electrical circuit fault detection;            | 4.0 Essential Skills   |
| c. Pulse reflection methods for aircraft       | 4.1 Teamwork skills;   |
| cable fault location.                          | 4.2 Communication skills;  |
| 12. Isolate faults according to detected       | 4.3 Fault analysis and isolation competence;   |
| 13 Check for normality after fault isolation:  | 4.4 Report writing competence;   |
| 14 Analyze the principles of faults:           | 4.5 Standard circuit construction competence;  |
| 15 Overy the connection schematic              | 4.6 Standard mechanical construction   |
| diagrams of the aircraft electrical cable;     | competence;  |
| 16. Analyze the possible locations of the      | 4.7 Effective work execution competence.   |
| fault points on the aircraft electrical        |  |
| circuits;                                      |  |
| 17. Observe health, occupational and           |  |
| environmental safety rules and                 |  |
| regulations.                                   |  |
|  |  |
| DESCRIPTION OF THE END                         | Faults in aircraft electrical circuits are   |
| PRODUCT / SERVICE                              | comprehensively diagnosed and maintained in  |
|  | accordance with the latest procedures and policy   |
|  | institution responsible for the aircraft model   |
|  | design, to ensure safe delivery for use.   |
| CIRCUMSTANTIAL KNOWLEDGE                       | Detailed knowledge about:  |
|  |  |
|  | 1. Safety operation of equipment and tools;  |
|  | <ol> <li>Safety operation of equipment and tools;</li> <li>Circuit inspection and testing;</li> </ol>  |
|  | <ol> <li>Safety operation of equipment and tools;</li> <li>Circuit inspection and testing;</li> <li>Troubleshooting and diagnosis;</li> </ol>  |
|  | <ol> <li>Safety operation of equipment and tools;</li> <li>Circuit inspection and testing;</li> <li>Troubleshooting and diagnosis;</li> <li>Data recording and analysis;</li> </ol>  |
|  | <ol> <li>Safety operation of equipment and tools;</li> <li>Circuit inspection and testing;</li> <li>Troubleshooting and diagnosis;</li> <li>Data recording and analysis;</li> <li>Connections and plugging/unplugging;</li> </ol>  |
|  | <ol> <li>Safety operation of equipment and tools;</li> <li>Circuit inspection and testing;</li> <li>Troubleshooting and diagnosis;</li> <li>Data recording and analysis;</li> <li>Connections and plugging/unplugging;</li> <li>Maintenance and replacement;</li> </ol>  |
|  | <ol> <li>Safety operation of equipment and tools;</li> <li>Circuit inspection and testing;</li> <li>Troubleshooting and diagnosis;</li> <li>Data recording and analysis;</li> <li>Connections and plugging/unplugging;</li> <li>Maintenance and replacement;</li> <li>Compliance with standards and procedures;</li> </ol> |

## TABLE 1: DACUM CHARTS FOR AVIONICS MAINTENANCE ENGINEER - NTA 8

| DUTIES  | TASKS   | ENABLERS   |
|---|---|--|
| 1.0 Conduct analysis<br>and isolation of<br>faults in aircraft<br>radar systems | 1.1 Perform management of<br>aircraft radar system<br>maintenance.                    | <ul> <li>General skills and knowledge</li> <li>Aerophysics</li> <li>Aviation mathematics</li> </ul>          |
| Tada systems  | 1.2 Carry out test of the aircraft main radar systems.                                | <ul> <li>Aerodynamics</li> <li>Electronic fundamentals</li> <li>Electrical fundamentals</li> </ul>           |
|   | 1.3 Conduct fault analysis and isolation of aircraft main radar systems.              | <ul> <li>Digital technologies</li> <li>Aircraft Maintenance Practices</li> </ul>                             |
|   | 1.4 Implement testing of the aircraft secondary radar systems.                        | <ul> <li>Standard circuit construction</li> <li>Use of tools and equipment</li> <li>Human factors</li> </ul> |
|   | 1.5 Perform analysis and<br>isolation of faults in<br>aircraft radar systems.         | <ul> <li>Civil aviation regulations</li> <li>Principles of radar</li> <li>Use of AMMs</li> </ul>             |
|   | 1.6 Carry out Integrated fault<br>tracing and diagnosis of<br>aircraft radar systems. | • Maintenance schemes  |
|   |   | <ul> <li>Personal protective equipment</li> </ul>  |
|   |   | <ul><li>Toolboxes</li><li>Computers</li></ul>  |
|   |   | • External power supplies  |
|   |   | <ul> <li>Crimping tools</li> <li>Multimeters</li> </ul>  |
|   |   | <ul> <li>Oscilloscopes</li> </ul>  |
|   |   | Heat guns     Anti-static wrist straps   |
|   |   | Welding guns   |
|   |   | • Connector pick-up and delivery tools   |
|   |   | • Meteorological radar testors   |
|   |   | • Radio altimeter testers  |
|   |   | Transponder testers for air traffic control  |
|   |   | Test devices of transponder<br>distance measuring instrument   |

| DUTIES               | TASKS                          | ENABLERS  |
|----------------------|--------------------------------|---|
|                      |                                | TCAS system tests                                 |
|                      |                                | Materials   |
|                      |                                | Contact cleaners                                  |
|                      |                                | Locking wires                                     |
|                      |                                | • Lacing  |
|                      |                                | Contact enhancers                                 |
|                      |                                | Electrical jointing                               |
|                      |                                | • Wires   |
|                      |                                | • Welding materials                               |
|                      |                                | • Heat shrinkable sleeves                         |
|                      |                                | • Solvent   |
|                      |                                | • Sealant   |
|                      |                                |   |
|                      |                                | <b>Requirements for employees</b>                 |
|                      |                                | • Data analysis competence                        |
|                      |                                | • Engineering technical report writing competence |
|                      |                                | • Fault analysis and isolation competence         |
|                      |                                | • Problem-solving competence                      |
|                      |                                | Stress management                                 |
|                      |                                | Teamwork consciousness                            |
|                      |                                | Communication skills                              |
|                      |                                | • Safety responsibility consciousness             |
| 2.0 Perform analysis | 2.1 Perform maintenance        | General skills and knowledge                      |
| and isolation of     | management of the              | • Aerophysics                                     |
| faults in the        | aircraft AFCS.                 | • Aviation mathematics                            |
| aircraft AFCS        | 2.2 Implement performance      | • Electronic fundamentals                         |
|                      | tests of the aircraft          | • Electrical fundamentals                         |
|                      | automatic driving/flight       | • Digital technologies                            |
|                      | guidance systems.              | Aircraft Maintenance Practices                    |
|                      | 2.3 Conduct fault analysis and | Standard circuit construction                     |
|                      | automatic driving/flight       | • Use of tools and equipment                      |
|                      | guidance systems.              | • Human factors                                   |

| DUTIES   | TASKS   | ENABLERS   |  |
|--|---|--|--|
|  | 2.4 Carry out performance<br>tests of the aircraft<br>autothrottle systems.   | <ul> <li>Civil aviation regulations</li> <li>Aircraft AFCS</li> <li>Use of AMMs</li> </ul>   |  |
|  | 2.5 Perform fault analysis and isolation of aircraft autothrottle systems.  | <ul> <li>Maintenance schemes</li> <li>Tools and equipment</li> </ul>   |  |
| <ul> <li>2.6 Implement performance tests of the aircraft flight stability augmentation systems.</li> <li>2.7 Conduct fault analysis and isolation of aircraft flight stability augmentation systems.</li> <li>2.8 Carry out performance tests of the aircraft automatic trimming systems.</li> </ul> | 2.6 Implement performance<br>tests of the aircraft flight<br>stability augmentation<br>systems.   | <ul> <li>Personal protective equipment</li> <li>Test equipment of aircraft control guidance computers</li> <li>Test equipment of autothrottle</li> </ul>           |  |
|  | 2.7 Conduct fault analysis and<br>isolation of aircraft flight<br>stability augmentation<br>systems.  | <ul> <li>Test equipment of automotile<br/>computers</li> <li>Test equipment of yaw damping<br/>computers</li> <li>Test equipment of aircreft stability</li> </ul>  |  |
|  | <ul> <li>Test equipment of aircraft stability<br/>augmentation computers</li> <li>Voltage-stabilized power supplies</li> <li>Oscilloscopes</li> </ul> |  |  |
|  | 2.9 Perform fault analysis and<br>isolation of aircraft<br>automatic trimming<br>systems.   | Multimeters<br>Heat guns<br>Anti-static wrist straps<br>Welding guns   |  |
|  | 2.10 Implement analysis of the<br>laws of aircraft automatic<br>driving.  | <ul> <li>Crimping tools and connector pick-<br/>up and delivery tools</li> <li>Torque wrenches</li> </ul>  |  |
|  | 2.11 Conduct design of the<br>laws of aircraft automatic<br>driving.  | Materials <ul> <li>Contact cleaners</li> </ul>   |  |
|  | 2.12 Carry out integrated fault<br>detection and diagnosis of<br>aircraft AFCS.   | <ul> <li>Contact enhancers</li> <li>Electrical jointing</li> <li>Wires</li> <li>Welding materials</li> <li>Heat shrinkable sleeves</li> <li>Air filters</li> </ul> |  |
|  |   | <ul><li>Requirements for employees</li><li>Data analysis competence</li></ul>  |  |

| DUTIES |  | TASKS   | ENABLERS   |  |
|--------|--|---|--|--|
|        |  |   | <ul> <li>Engineering technical report writing<br/>competence</li> <li>Fault analysis and isolation<br/>competence</li> <li>Problem-solving competence</li> <li>Stress management</li> <li>Teamwork consciousness</li> <li>Communication skills</li> <li>Safety responsibility consciousness</li> </ul>   |  |
| 3.0    | Carry out<br>Management of<br>Aeronautical<br>Maintenance<br>Engineering | <ul> <li>3.1 Develop aircraft maintenance plans and component maintenance plans.</li> <li>3.2 Conduct aeronautical maintenance personnel management and evaluation</li> </ul> | <ul> <li>General skills and knowledge</li> <li>Airworthiness standards of aircraft</li> <li>Human factors</li> <li>Civil aviation regulations</li> <li>Aeronautical maintenance<br/>engineering management</li> <li>Data collection, statistics and<br/>analysis</li> <li>Engineering investigation</li> <li>Use of AMMs</li> <li>Maintenance schemes</li> </ul> |  |
|        |  | 3.3 Manage and evaluate<br>plant facilities/tools and<br>devices/equipment.   |  |  |
|        |  | 3.4 Implement preparation of maintenance schemes.   |  |  |
|        |  | 3.5 Perform reliability<br>management and scheme<br>development.  | <ul> <li>Facilities</li> <li>Maintenance plan office</li> <li>Electronic office equipment</li> </ul>   |  |
|        |  | 3.6 Conduct quality control<br>and evaluation of<br>aeronautical maintenance.   | <ul> <li>Technical document of maintenance</li> <li>Tools, aviation materials and<br/>consumables</li> <li>Transportation equipment</li> <li>Requirements for employees</li> </ul>   |  |
|        |  | 3.7 Carry out aeronautical maintenance cost control.  |  |  |
|        |  |   | • Technical document reading competence  |  |
|        |  |   | <ul> <li>Computer application competence</li> <li>Technical reports writing<br/>competence</li> <li>Teamwork consciousness</li> <li>Communication skills</li> </ul>  |  |

| DUTIES | TASKS | ENABLERS                          |                                      |
|--------|-------|-----------------------------------|--------------------------------------|
|        |       | <b>Requirements for employees</b> |                                      |
|        |       | • ]                               | Data analysis competence             |
|        |       | • ]                               | Engineering technical report writing |
|        |       | (                                 | competence                           |
|        |       | • ]                               | Problem-solving competence           |
|        |       | •                                 | Stress management                    |
|        |       | • *                               | Teamwork consciousness               |
|        |       | • (                               | Communication skills                 |
|        |       | •                                 | Safety responsibility consciousness  |