



MOLDATSA

Primary/Secondary (Mode S) Radar System

Scope of Work (SOW)

**Primary/Secondary
(Mode S) Radar System
Scope of Work
(SOW)**



Contents

| | |
|---|-----------|
| 1 SCOPE | 3 |
| 1-1 PURPOSE | 3 |
| 1-2 REVISION HISTORY | 3 |
| 1-3 INTRODUCTION | 3 |
| 1-4 PROTECTIVE MARKING POLICY | 4 |
| 1-5 READING INSTRUCTIONS | 4 |
| 1-6 REFERENCES | 5 |
| 2 DELIVERABLES | 6 |
| 3 REQUIREMENTS RELATED TO TENDER | 6 |
| 4 PROJECT MANAGEMENT | 7 |
| 5 QUALITY MANAGEMENT | 7 |
| 6 INSTALLATION AND COMMISSIONING | 7 |
| 6-1 GENERAL | 7 |
| 6-2 TRANSITION | 8 |
| 7 ACCEPTANCE TESTS | 8 |
| 7-1 GENERAL | 8 |
| 7-2 FAT | 9 |
| 7-3 SAT | 10 |
| 7-4 FLIGHT TEST AND COMMISSIONING | 11 |
| 7-5 TEST RESULTS DOCUMENTATION | 11 |
| 7-6 PROBLEM/FAULT HANDLING | 11 |
| 8 MAINTENANCE AND SUPPORT | 12 |
| 8-1 GENERAL | 12 |
| 8-2 HARDWARE MAINTENANCE | 12 |
| 8-3 SOFTWARE MAINTENANCE | 13 |
| 9 DOCUMENTATION | 13 |
| 9-1 TECHNICAL DOCUMENTATION | 13 |
| 9-2 PROJECT DOCUMENTATION | 15 |
| 10 TRAINING | 15 |
| 10-1 COMMON TRAINING INFORMATION | 15 |
| 10-2 TECHNICAL TRAINING | 16 |
| 11 SPARE PARTS | 17 |
| 12 WARRANTY | 18 |
| 12-1 GENERAL REQUIREMENTS | 18 |
| 12-2 CORRECTIVE ACTIONS | 19 |
| 12-3 SUPPORT AND TECHNICAL ASSISTANCE | 19 |
| 12-4 EXPIRATION OF WARRANTY | 19 |
| 13 NOTES | 20 |
| 13-1 ABBREVIATIONS | 20 |

| <i>Date</i> | <i>Version</i> | <i>Status</i> | <i>File</i> |
|-------------|----------------|---------------|---|
| 26-10-2025 | 3.0 | Final | 26102025_final_Scope of Work for PSR/SSR Mode S |



1 SCOPE

1-1 Purpose

The Scope of Work (SOW) describes logistics support and services requirements for purchase a modern, advanced Combined Primary/Secondary Mode-S Radar for MOLDATSA surveillance infrastructure.

The SOW specifies requirements on Standards, delivery, installation, maintenance, documentation, QM, Acceptance testing, commissioning, transition strategies, safety assurance, project management, spares, etc.

1-2 Revision history

| Date | Version | Responsible | Comments/Status |
|------------|---------|------------------------|-----------------|
| 13-02-2025 | 1.0 | S. Sandu V. Stratan | Draft |
| 28-02-2025 | 2.0 | V. Stratan | Draft |
| 07-03-2025 | 2.0 | S. Sandu | Draft |
| 26-10-2025 | 3.0 | S. Sandu V. Stratan | Final |

1-3 Introduction

MOLDATSA, the Air Navigation Service Provider (ANSP) of the Republic of Moldova, oversees the safe and efficient management of the national airspace. To address the growing demands of increasing air traffic and ensure alignment with international standards, MOLDATSA is committed to modernizing its radar surveillance infrastructure. The current radar systems, while operational, are nearing obsolescence and lack the advanced capabilities required to meet contemporary aviation needs, including, reliability, and compliance with ICAO and Eurocontrol requirements.

The acquisition of state-of-the-art PSR and MSSR Mode S radar systems is part of MOLDATSA's strategic plan to enhance operational capacity, improve the safety and efficiency of air traffic management, and ensure compliance with ICAO and Eurocontrol standards. This modernization initiative will support both civil and military airspace operations, ensuring seamless integration with neighbouring air navigation systems and contributing to regional airspace security.

| Date | Version | Status | File |
|------------|---------|--------|---|
| 26-10-2025 | 3.0 | Final | 26102025_final_Scope of Work for PSR/SSR Mode S |



The Supplier **shall** provide, test and integrate the PSR and MSSR Mode S radar systems to MOLDATSA's radar surveillance infrastructure, deliver spare parts, documentation and support all components necessary to meet the requirements as specified in the PSR/MSSR Mode S Specification (see references [TS]) in accordance with contract terms delineated in the instructions for tendering process.

This document outlines the Scope of Work (SOW) for the procurement, installation, testing, and commissioning of Combined Primary Surveillance Radar (PSR) and Secondary Surveillance Radar (MSSR) Mode S systems. These systems aim to improve airspace surveillance, bolster safety measures, and enhance operational efficiency while ensuring compliance with international aviation standards.

1-4 Protective marking policy

Whilst the existence and purpose of the PSR and MSSR Mode S radar systems is part of MOLDATSA's radar surveillance infrastructure is public information, the details of the system as described in this document are not. The contents of this document **shall** not therefore be released or otherwise made available to anyone except personnel at MOLDATSA and by MOLDATSA authorized Tenderers and their potential sub-contractors. In accordance with this policy, the document is marked COMMERCIAL IN CONFIDENCE.

1-5 Reading instructions

A three/four -digit number to the left of a paragraph identifies requirements in this specification. Paragraphs a less or without this number are for information only.

Conventions for denoting requirements are as follows:

‘**Shall**’ - indicates a statement of specification, the compliance with which is mandatory to achieve. It indicates a requirement that must be satisfied by the offered systems claiming conformity to the specification. Such requirements are intended to be testable and their implementation auditable.

‘**Should**’ - indicates a recommendation or best practice, whose use is encouraged, but which **may** or **may not** be satisfied by the offered systems claiming conformity to the specification.

‘**May**’ – indicates an optional feature.

‘**Will**’ – is meant in its normal English usage to indicate a forward-looking statement or statement of intent.

| <i>Date</i> | <i>Version</i> | <i>Status</i> | <i>File</i> |
|-------------|----------------|---------------|---|
| 26-10-2025 | 3.0 | Final | 26102025_final_Scope of Work for PSR/SSR Mode S |



1-6 References

The following documents are referred to in this document, or have relevance for its content. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. For non-dated references, latest or current versions **shall** apply.

| Reference | Document |
|------------------|--|
| [TS] | PSR/MSSR Mode S Technical Specification for MOLDATSA |
| [EU1768/2023] | REGULATION (EU) 2023/1768 https://eur-lex.europa.eu/eli/reg_del/2023/1768/oj/eng |
| [EU1769/2023] | REGULATION (EU) 2023/1769 https://eur-lex.europa.eu/eli/reg_impl/2023/1769/oj/eng |

| <i>Date</i> | <i>Version</i> | <i>Status</i> | <i>File</i> |
|-------------|----------------|---------------|---|
| 26-10-2025 | 3.0 | Final | 26102025_final_Scope of Work for PSR/SSR Mode S |



2 DELIVERABLES

- 2-1.1. The Supplier **shall** after contract award, during the initial requirement analysis phase, produce system documentation that contain all agreed upon requirements based on the Specification for and the Supplier's adapted system documentation. This documentation will hereafter (in this document) be referred to as **Requirements Specification**.
- 2-1.2. The Supplier **shall** deliver:
- The new one, modern, advanced, Combined PSR and MSSR Mode S radar systems with related documentation according to accepted system documentation; TS, Requirements Specification, see paragraph above;

3 REQUIREMENTS RELATED TO TENDER

- 3-1.1. A complete list of hardware and respective quantities used in the entire system **shall** be provided with the offer.
- 3-1.2. The supplier **shall** specify prices for modules.
- 3-1.3. The Supplier **shall** provide in his offer the mechanical dimensions of the equipment as well as power requirements.
- 3-1.4. The Supplier **shall** provide in his offer the after-warranty support cost.
- 3-1.5. The Supplier shall present a list that attests to the point-by-point compliance with the technical specifications (Compliance Matrix), providing complete details in case of discrepancies or non-fulfillment. The list **shall** follow the order of requirements in the technical specifications.
- 3-1.6. During the offer evaluation period, the Buyer will visit a radar system that has been installed and declared operational within the past three years. The system will be selected from the equipment list provided by the Supplier and will have the same configuration as the radar systems being acquired. Additional details is specified in the call for tender.
- 3-1.7. The Supplier **shall** facilitate this visit in a timely manner by appointing a technical representative to address any potential discrepancies between the technical data provided in the offer and the technical information obtained during the visit.
- 3-1.8. The Buyer will bear the transportation and accommodation costs for its representatives

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| <i>Date</i> | <i>Version</i> | <i>Status</i> | <i>File</i> |
|-------------|----------------|---------------|---|
| 26-10-2025 | 3.0 | Final | 26102025_final_Scope of Work for PSR/SSR Mode S |



4 PROJECT MANAGEMENT

- 4-1.1. The Supplier **shall** appoint a project manager for the coordination of the project execution, who would directly coordinate with the project manager that will be appointed by MOLDATSA.
- 4-1.2. Project managers of both parties **shall** act as respective points of contact, effective from the date of signing of contract up to the end of the warranty period in respect of all matters related to the contract.
- 4-1.3. The Supplier **shall** produce a Project Management Plan (PMP) to be discussed and mutually approved as part of contract negotiations. The PMP **shall** contain all information related to Scope Of Work, including time schedule.
- 4-1.4. The Supplier **shall** inform and advice MOLDATSA as soon as possible after obtained knowledge regarding changes of hardware models used in the system, their specifications or discontinuation of production.
- 4-1.5. In the event of procurement of spare hardware and if it is found that the said hardware component has become obsolete or out of manufacture due to age or advancement in technology, the Supplier **shall** provide necessary software upgrades / modifications / patches to adopt available hardware to ensure original system performance, at no cost to the Buyer (for radar modification), up to ten (10) Years from Provisional Acceptance of the system.

5 QUALITY MANAGEMENT

- 5-1.1. The Supplier **shall** be certified by authorized association according to ISO 9001:2015.
- 5-1.2. The Supplier **shall** appoint a quality manager for the duration of the project.

6 DELIVERY AND INSTALLATION

6-1 General

- 6-1.1. The Supplier **shall** in coordination with MOLDATSA, perform installation of the PSR/MSSR Mode S, provided as part of the MOLDATSA's radar surveillance infrastructure;
- 6-1.2. The supplier is required to provide copies of all installation set of software and operating systems, used for the operation of supplied equipment, as well as

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| <i>Date</i> | <i>Version</i> | <i>Status</i> | <i>File</i> |
|-------------|----------------|---------------|---|
| 26-10-2025 | 3.0 | Final | 26102025_final_Scope of Work for PSR/SSR Mode S |



instructions, configuration files, license keys, ect. for their installation and proper functioning.

- 6-1.3. The Supplier **shall** be responsible for all transportation and delivery of equipment to the Moldova border MOLDATSA will assist with customs clearances;
- 6-1.4. Protection of the equipment **shall** be provided during the installation (dust, mechanical accidents, etc.);
- 6-1.5. The Supplier **shall** provide to MOLDATSA all documentation necessary for software and hardware **before installation** (installation plan, cable labelling, cable connections, etc.);

6-2 Transition

- 6-2.1. The period of time between switching off the old radar and switching on the new radar system **shall** be specified by the supplier and **shall** be as short as possible.
- 6-2.2. A Transition Plan **shall** be produced by the Supplier and MOLDATSA **shall** coordinate it.

7 ACCEPTANCE TESTS AND COMMISSIONING

7-1 General

- 7-1.1. There **shall** be a Factory Acceptance Test (FAT) and a Site Acceptance Tests (SAT):
 - FAT to be performed at the Suppliers premises
 - SAT to be performed at MOLDATSA’s premises
- 7-1.2. The Supplier **should** provide only one equipment delivery.
- 7-1.3. The Supplier **shall** be responsible for arranging and performing the acceptance testing. MOLDATSA **shall** be participate as test conductors and observers as appropriate;
- 7-1.4. The Supplier **shall** provide all necessary test equipment, tools and instruments. FAT, setting up, SAT and commissioning **shall** be performed using exclusively the instruments provided with the system and included in the offer;
- 7-1.5. The Supplier **shall** provide test plans and procedures for acceptance testing (in advance, not later than 2 weeks before tests). MOLDATSA has amending power for procedures and content of tests. Any set of tests considered by customer to be essential

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| <i>Date</i> | <i>Version</i> | <i>Status</i> | <i>File</i> |
|-------------|----------------|---------------|---|
| 26-10-2025 | 3.0 | Final | 26102025_final_Scope of Work for PSR/SSR Mode S |



for demonstrating proposed performances can be required by customer and provider **shall** accept and include it in a separate part of the test documentation and test data records;

- 7-1.6. The test plans **shall** at least specify the configuration to be used, time schedule and acceptance criteria.
- 7-1.7. The test documentation **shall** specify step-by-step verification of all requirements and produce test reports with the results and conclusions.
- 7-1.8. The Supplier **shall** satisfactorily prove that the methods of testing provide confirmation that the delivered system actually meets the requirements of the Requirements Specification.
- 7-1.9. The Supplier **shall** provide details in the test procedures to show that all resources (test equipment, procedures, etc.) are adequate and available to perform the testing.
- 7-1.10. The Supplier **shall** provide detailed explanations on how not-testable requirements are verified.
- 7-1.11. The test documentation **shall** be approved by MOLDATSA before the beginning of the testing.
- 7-1.12. MOLDATSA **shall** have the right to do additional tests during the SAT period in order to verify and validate certain aspects of the delivered system, for instance safety and security.

7-2 Factory Acceptance Tests (FAT)

- 7-2.1. Prior to the shipment of radar system the Supplier **shall** carry of Factory Acceptance Tests (FAT) in the presence of Buyer representatives (max. 3 persons) at the supplier's factory;
- 7-2.2. The FAT **shall** be performed separately for each system, before the system delivery;
- 7-2.3. FAT **shall** be scheduled between the theoretical training course and the system shipment;
- 7-2.4. The FAT **shall** demonstrate a majority of functions and performance of the system according to the Requirements Specification.
- 7-2.5. The Supplier **shall** provide all necessary test equipment, tools and instruments for the FAT.

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| <i>Date</i> | <i>Version</i> | <i>Status</i> | <i>File</i> |
|-------------|----------------|---------------|---|
| 26-10-2025 | 3.0 | Final | 26102025_final_Scope of Work for PSR/SSR Mode S |



- 7-2.6. The FAT configuration can be limited in comparison with the SAT configuration. The Supplier **shall** propose the hardware configuration that will be used for FAT. This configuration and test procedures **shall** be approved by MOLDATSA;
- 7-2.7. The FAT **should** be performed in a simulated operational environment where appropriate;
- 7-2.8. The expenses for Buyer representatives (except local transportation) **shall** be born by the Buyer;
- 7-2.9. Local transportation **shall** be born by the Supplier;
- 7-2.10. If FAT tests fail and they **shall** be repeated for causes imputable to the Supplier, the Supplier **shall** bear all costs related to the repetition of the FAT. The period for the new tests **shall** be agreed by the parties.

7-3 Site Acceptance Tests (SAT)

- 7-3.1. The installation on site and adjustment (fine tuning) works **shall** be followed by the site acceptance tests (SAT), which **shall** be carried out by the Supplier's representatives, in the presence of the Buyer's specialists;
- 7-3.2. The Supplier **shall** send to the Buyer a test documentation to be used for the SAT tests, at least one month before SAT activity. The test documentation **shall** be improved with the Buyer proposals (if any). The test results **shall** be recorded in TDRs (Test Data Reports);
- 7-3.3. The SAT **shall** demonstrate every function and the performance of the system according to the Requirements Specification.
- 7-3.4. The SAT **shall** constitute the complete testing of all units, modules and interconnected subsystems which form the whole System, to demonstrate the System compliance with all requirements, using testing equipment and live data as appropriate.
- 7-3.5. Supplier **shall** propose the hardware configuration that will be used for SAT. This configuration **shall** be approved by MOLDATSA. SAT **shall** be performed in the real operational environment where appropriate.
- 7-3.6. The Supplier **shall** make available any additional hardware needed in order to fully verify the requirements. This configuration **shall** be in each case approved by MOLDATSA.

| <i>Date</i> | <i>Version</i> | <i>Status</i> | <i>File</i> |
|-------------|----------------|---------------|---|
| 26-10-2025 | 3.0 | Final | 26102025_final_Scope of Work for PSR/SSR Mode S |



7-4 Flight Test and Commissioning

- 7-4.1. Flight Checks of the radar systems **shall** be conducted, only after passing the of the SAT;
- 7-4.2. The flight test methodology and procedure shall be proposed by the supplier and approved by the customer;
- 7-4.3. Commissioning **shall** be ended when Moldavian CAA will accept the documentation.

7-5 Test Results documentation

- 7-5.1. Each individual test result **shall** be clearly identified. Faults or problems **shall** be clearly described and categorized. Supplier and MOLDATSA representatives **shall** sign the test result protocols;
- 7-5.2. The result of each test **shall** be marked PASS or FAIL in Test Data Record for each test phase (FAT, SAT);
- 7-5.3. Each testing phase (FAT, SAT) **shall** be accepted only if all tests are marked as PASS and without observations;
- 7-5.4. The final results and conclusions **shall** be documented by:
 - a FAT/SAT protocol, which **shall** be signed by both parties, as an approval of the related FAT/SAT;
 - an issued Acceptance Certificate,
- 7-5.5 After SAT and a possible validation period the Supplier **shall** issue the Statement of Compliance conform REGULATION (EU) 2023/1768

7-6 Problem/fault handling

- 7-6.1 Any failed units **shall** be repaired or replaced. Cause of failure **shall** be documented and if necessary, processes and materials or components changed, so that all requirements are met.
- 7-6.2 Replaced units, and all other units that **may** have been affected by the failed unit, **shall** be re-tested to demonstrate final compliance with the Requirements Specification.

| <i>Date</i> | <i>Version</i> | <i>Status</i> | <i>File</i> |
|-------------|----------------|---------------|---|
| 26-10-2025 | 3.0 | Final | 26102025_final_Scope of Work for PSR/SSR Mode S |



- 7-6.3. All errors detected in the software **shall** be fixed and the cause of the error documented. All functions that **may** have been affected by the failed module **shall** be re-tested.
- 7-6.4. The Supplier **shall** log all test failures as problem reports. All test failures **shall** be categorized, reported and agreed with MOLDATSA.
- 7-6.5. Any equipment damage caused as a result of any testing **shall** be corrected and the equipment refurbished at the Supplier's expense prior to MOLDATSA's acceptance.

8 MAINTENANCE AND SUPPORT

8-1 General

- 8-1.1. MOLDATSA is main responsible for the Preventive and Corrective Maintenance as well as Performance Measurements.
- 8-1.2. The Supplier **shall** provide support to maintain the system for a minimum of fifteen (15) years period from the date of Final Acceptance with or without entering into a maintenance contract.
- 8-1.3. Maintenance strategy **shall** be repairing at the LRU (Line Replaceable Unit) level.
- 8-1.4. The Supplier **shall** with local support from MOLDATSA keep the PSR/MSSR Mode_S system software in good operating conditions and warrant that it works in accordance with the system documentation.
- 8-1.5. The Supplier **shall**, on demand, provide a maintenance and support offer for both the warranty period and after the expiration of the warranty period.

8-2 Hardware Maintenance

- 8-2.1. In case an LRU becomes “out of market” before the end of the PSR/MSSR Mode_S system lifetime according to requirement, the supplier **shall** suggest and test out an alternative LRU without further costs for MOLDATSA.
- 8-2.2. The Supplier **shall** sufficiently equip MOLDATSA in order to make all necessary adjustments on the delivered hardware configuration items and provide MOLDATSA with adequate tools and documentation to make all necessary upgrades on the delivered equipment.

| <i>Date</i> | <i>Version</i> | <i>Status</i> | <i>File</i> |
|-------------|----------------|---------------|---|
| 26-10-2025 | 3.0 | Final | 26102025_final_Scope of Work for PSR/SSR Mode S |



8-3 Software Maintenance

- 8-3.1. The Supplier **shall** be responsible for maintaining the delivered software and firmware operation during the whole PSR/MSSR Mode S system lifetime. This means that whereas all software and firmware malfunctions detected by the users of the system **shall** be corrected free of charge during the warranty period;
- 8-3.2. The Supplier **shall** fix defective components and do amendments to a reasonable price after the warranty period has expired.

9 DOCUMENTATION

9-1 Technical Documentation

- 9-1.1. The technical and operational documentation **shall** enable operation, maintenance, fault diagnosis and repair of the Equipment by trained personnel, according to documentation specified in PSR/MSSR Mode S system Specification. The Supplier **shall** deliver the system documentation for operation and maintenance, including software and licenses.
- 9-1.2. The technical documentation is:
 - Technical Manual describing the system;
 - Technical Manual for preventive and corrective maintenance of all equipment to be supplied;
 - Operation Manual of the system;
 - Interface Control Document (ICD);
- 9-1.3. The documentation is delivered in softcopy, together with 2 printed copies for each radar system;
- 9-1.4. The technical documentation **shall** cover the following information:
 - General description of the system, including system performances detailed description of all technical characteristics and controls of configuration detailed interconnections diagrams and cabling of all system the preventive and corrective maintenance, indicating the setting up procedures in case of replacement of failed modules;
 - The troubleshooting procedures;
 - The detailed presentation of the all-errors codes and diagnostic messages;
 - The detailed presentation of the reflection suppression method for Mode S sensors.
- 9-1.5. The technical and operational documentation **shall** enable operation, maintenance, fault diagnosis and repair of the Equipment by trained personnel, according to documentation specified [TS];

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| <i>Date</i> | <i>Version</i> | <i>Status</i> | <i>File</i> |
|-------------|----------------|---------------|---|
| 26-10-2025 | 3.0 | Final | 26102025_final_Scope of Work for PSR/SSR Mode S |



- 9-1.6. The technical documentation to be provided **shall** be clear and concise, containing all necessary illustrations, and **shall** also during the life cycle to be up-to-date.
- 9-1.7. Technical documentation **shall** contain all necessary data which will help MOLDATSA maintenance staff finding faults and repair/replace modules/items on the LRU level, see further [TS];
- 9-1.8. Additional information **shall** be added to these technical documents on request from MOLDATSA;
- 9-1.9. The System Design Description **shall** cover at least all hardware configurations and the software configuration of the runtime system. It shall also include descriptions and technical specifications of the included hardware components;
- 9-1.10. The system CMS's manual **shall** include all necessary information for monitoring and control of the system including all maintenance, such as parameter and software changes, required.
- 9-1.11. The installation manual **shall** include details on the installations, such as cabling, labeling, possible strapping's etc.;
- 9-1.12. The list of delivery **shall** include all equipment delivered within the project with relevant product identification and serial numbers;
- 9-1.13. Documentation and manuals received with COTS hardware and software **shall** all be delivered to MoldATSA;
- 9-1.14. The supplier **shall** support MoldATSA in creation of a technical passport for the system including:
- a) General information;
 - b) Information about the manufacturers) and date of delivery;
 - c) References to contract and specifications for details;
 - d) List of delivery including product and serial numbers of all components;
 - e) Acceptance certificates;
 - f) Empty log pages for:
 - Problem reports;
 - Maintenance and corrective action performed;
 - Number of hours of availability per month, year and total.
- 9-1.15. The following documents **should** be delivered together with the system:
- a) System/Subsystem Specification;
 - b) Interface Requirements Specification;
 - c) Interface Control Documents (detailed design documents);

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| <i>Date</i> | <i>Version</i> | <i>Status</i> | <i>File</i> |
|-------------|----------------|---------------|---|
| 26-10-2025 | 3.0 | Final | 26102025_final_Scope of Work for PSR/SSR Mode S |



- d) System Design Descriptions to a reasonable level;
- e) System CMS's manual;
- f) Installation manual;
- g) Detailed list of delivery (LOD);
- h) Declaration or Certificates in accordance with regulatory requirements [EU1768/2023] and [EU1769/2023].

9-1.16. The technical documentation **shall** be in English (Romanian or Russian languages welcomed), legible, and of a quality that allows reproduction for training purposes.

9-1.17. The Supplier **shall** continuously maintain all PSR/MSSR Mode_S system documentation under its Configuration Management System during the lifetime of the system;

9-1.18. Additional information **shall** be added to these technical documents on request from MOLDATSA.

9-2 Project Documentation

9-2.1. The project documentation **shall** at least encompass

- Project Management Plan (PMP);
- Transition Plan;
- Project management documentation, such as Progress reports, etc.

9-2.2. The project documentation **shall** be in English and delivered in electronic format, in Portable Document Format (PDF). The documents **shall** be up-to-date.

10 TRAINING

10-1 Common training information

10-1.1. Travel and accommodation costs for MOLDATSA personnel will be paid by MOLDATSA.

10-1.2. The Supplier **shall** provide training for technical personnel of MOLDATSA (max. 5 persons), to use, operate, maintain, and support the PSR/MSSR Mode_S system;

10-1.3. Training documents **shall** be provided in hardcopy and softcopy (PDF, DOC) to all students;

10-1.4. After the course the MOLDATSA students **shall** obtain the certificate of Successful Completion of Training (“Training Certificate”) for each trainee, signed by the

| <i>Date</i> | <i>Version</i> | <i>Status</i> | <i>File</i> |
|-------------|----------------|---------------|---|
| 26-10-2025 | 3.0 | Final | 26102025_final_Scope of Work for PSR/SSR Mode S |



authorized representative of the Supplier. That Certificate **shall** allow to instruct other MOLDATSA specialists to operate and technically support the System.

10-2 Technical Training

10-2.1. The supplier **shall** provide a staff training proposal for a course(s) covering the fundamental aspects of system operation and maintenance, specifically related to the PSR/MSSR Mode S system, to ensure hands-on experience with the system. The training **shall** include:

- System Architecture (Hardware);
- System Architecture (Software);
- Basic system operation;
- Use of diagnostic tools and procedures;
- Error log interpretation and analysis;
- System fault finding and restoration;
- Repairs at the LRU level;
- Managing technical supervision windows;
- Customization of all off-line parameters, such as map generation, etc.;
- Archiving and replay procedures;
- Documentation.

10-2.2. Level of theoretical instruction and practical training **shall** enable participants to confidently perform all maintenance and repair or replace activities, diagnose fault conditions, operate monitoring system, etc.;

10-2.3. Courses **shall** be presented by experienced professional instructors who are expert in the equipment systems being purchased;

10-2.4. Training course materials **shall** be reliable and presented in both printed and electronic formats (Microsoft Word, PowerPoint, or PDF) in English (Romanian and Russian language is welcomed) be legible and of a quality that allows reproduction for training purposes;

10-2.5. Training lessons **shall** be held in English (Romanian and Russian language is very welcomed);

10-2.6. Training at the Supplier training center.

10-2.6.1. The Supplier **shall** provide training for technical personnel of MOLDATSA (max. 5 persons);

| <i>Date</i> | <i>Version</i> | <i>Status</i> | <i>File</i> |
|-------------|----------------|---------------|---|
| 26-10-2025 | 3.0 | Final | 26102025_final_Scope of Work for PSR/SSR Mode S |



- 10-2.6.2. This training **shall** be carried out at Supplier's training centre prior to Factory Acceptance Tests (FAT) of each equipment, to ensure to MOLDATSA's technical personnel the necessary knowledge and competence in what installation and setup of the equipment are concerned;
- 10-2.6.3. The Supplier **shall** submit full details regarding the offered courses, including the syllabus to be covered;
- 10-2.6.4. The Buyer **shall** bear transport expenses as well as accommodation and daily allowance, while the Supplier **shall** provide local transportation.
- 10-2.7. On-the-Job Training
 - 10-2.7.1. The Supplier **shall** provide practical on-site training for the technical personnel at the equipment installation location;
 - 10-2.7.2. The Supplier **shall** provide details regarding the training, including the curriculum to be covered;
 - 10-2.7.3. The training **shall** take place at the installation site after the installation and optimization of the equipment parameters but before the SAT (Site Acceptance Test).

11 INSTRUMENTS AND SPARE PARTS

- 11-1.1. The offer **shall** include all the special tools and instruments used for FAT, installation, setting up, SAT, commissioning and maintaining the system. Calibration validity for all special instruments **shall** be at least 3 years from radar system commissioning date;
- 11-1.2. Spare parts **shall** be supplied with the system.
All spare parts **shall** be provided at the level of Line Replaceable Unit (LRU);
- 11-1.3. The quantities of spare LRU's **shall** be according to the following table:

| Number of LRU's used in the system | Number of spare LRU's required |
|---|---------------------------------------|
| 02 to 04 | 01- 02 Units |
| 05 to 09 | 03 Units |
| More than 10 | 04 Units |

| <i>Date</i> | <i>Version</i> | <i>Status</i> | <i>File</i> |
|-------------|----------------|---------------|---|
| 26-10-2025 | 3.0 | Final | 26102025_final_Scope of Work for PSR/SSR Mode S |



11-1.4. The price for additional LRU's **shall** not exceed the original price plus inflationary percentage cost associated with the spare and/or replacement parts on a per year basis.

12 WARRANTY

12-1 General requirements

12-1.1. The warranty period **shall** be at least three (3) years for application software and for all delivered hardware, counting from the day of approved SAT. The cost of additional warranty year/years **should** be offered as an option;

12-1.2. During the guarantee period all faulty equipment **shall** be replaced or repaired within max. 60 days from the receipt by the Supplier or his local collaborator of the faulty modules/spare parts;

12-1.3. The Supplier **shall** detail in his technical proposal the work arrangements regarding the solving of any problems occurred during the guarantee period;

12-1.4. From the time of approval of SAT and until the warranty expires according to the contract, the Supplier **shall** warrant the deliveries against all defects and failures at the Supplier's expense (including transportation costs);

12-1.5. For such defects, which have been identified prior to the expiration of the warranty, but not remedied within the period of warranty, the warranty **shall** remain until the remedial actions have been completed and the effect of the action has been adequately verified, at the Supplier's expense (including transportation costs), the warranty for a component repaired during this period shall be set for no less than 12 months;

12-1.6. The Supplier's warranty **shall** include:

- Corrective actions on product nonconformities;
- Support and technical assistance;
- Expiration strategy.

12-1.7. The Supplier **shall** warrant the deliveries against malfunctions and/or defects introduced by MOLDATSA's staff during preventive maintenance, as long as the MOLDATSA's staff follows the procedures and instructions for the work to be performed;

12-1.8. The entire costs, inclusive the costs related to the shipments, for the correction of deficiencies falling under warranty **shall** be borne by the Supplier.

| <i>Date</i> | <i>Version</i> | <i>Status</i> | <i>File</i> |
|-------------|----------------|---------------|---|
| 26-10-2025 | 3.0 | Final | 26102025_final_Scope of Work for PSR/SSR Mode S |



12-2 Corrective Actions

- 12-2.1. If a defect of general nature, e.g. objectively exists in other parts of the deliveries than the one in which the defect was identified, the Supplier **shall** take the necessary actions to ensure that such defects are also remedied;
- 12-2.2. If the Supplier, in order to restore full operation within the warranted delivery, introduces work-around solutions or patches or other similar non-permanent solutions, the Supplier **shall** as soon as possible, and in no case more than 3 months after a defect has been identified, implement a final and permanent solution;
- 12-2.3. Work-around solutions, patches etc. **shall** only be used where this can ensure full and normal operation of the delivery Unit or where the Purchaser explicitly has accepted such a solution in order to retain minimum level operation.
- 12-2.4. During warranty the Supplier **shall** replace any used spare item free of cost for MOLDATSA, when the costs are related to:
- Replacement of failed units;
 - Repair of failed units.

12-3 Support and technical assistance

- 12-3.1. The Supplier **should** use MOLDATSA staff on site, if available, to perform diagnostics, repairs etc., but the responsibility of remedying the defect **shall** solely remain on the Supplier.
- 12-3.2. If MOLDATSA's staff is used by the Supplier, the Supplier **shall** support the staff with specialist knowledge as required.
- 12-3.3. The Supplier **shall** prepare a procedure for reporting defects from MOLDATSA to the Supplier, ensuring that a defect is properly reported and corrective actions followed up.

12-4 Expiration of Warranty

- 12-4.1. When the warranty period expires:
- the Supplier **shall** deliver all information that has been gathered during the maintenance and support, including all documentation of work performed (repair/corrective actions reports etc.);

| <i>Date</i> | <i>Version</i> | <i>Status</i> | <i>File</i> |
|-------------|----------------|---------------|---|
| 26-10-2025 | 3.0 | Final | 26102025_final_Scope of Work for PSR/SSR Mode S |



- all procedures, routines, documentation and additional tools used during the maintenance **shall** be delivered to MOLDATSA and be the property of MOLDATSA, except for those exemptions on COTS software that **may** be included in the contract or otherwise agreed in license agreements/conditions known at the time of contract signature.

13 NOTES

13-1 Abbreviations

| Abbreviation | Definition |
|--------------|---|
| CMS | Control and Monitoring System |
| COTS | Commercial Off The Shelf |
| FAT | Factory Acceptance Test |
| LRU | Line Replacement Unit |
| MOLDATSA | Moldavian Air Traffic Services Authority |
| PDF | Portable Document Format |
| PMP | Project Management Plan |
| QM | Quality Management |
| RFP | Request For Proposal |
| ROP | Reserve Observation Position |
| SAT | Site Acceptance Test |
| SOW | Scope Of Work |
| SS | PSR/MSSR Mode_S Specification for MoldATSA |
| TBD | To Be Defined |
| TBS | To Be Specified |
| TCP/IP | Transmission Control Protocol/Internet Protocol |
| HMI | Human Machine Interface |

| <i>Date</i> | <i>Version</i> | <i>Status</i> | <i>File</i> |
|-------------|----------------|---------------|---|
| 26-10-2025 | 3.0 | Final | 26102025_final_Scope of Work for PSR/SSR Mode S |