

# **INTEGRATED LOGISTIC SUPPORT PLAN (ILSP)**

**for**

## **MAN-PORTABLE SURVEILLANCE AND TARGET ACQUISITION RADAR (MSTAR) OBSOLESCENCE REPLACEMENT PROGRAMME (ORP)**

**Version 2.1**

**Issued by**

**DEFENCE EQUIPMENT & SUPPORT (DE&S) on behalf of  
ARTILLERY SYSTEMS (ARTYSYS)**

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**REFERENCE AND GUIDANCE DOCUMENTATION**

<b>Plan and Report/CDR Reference</b>	<b>Document Title</b>	<b>Reference and Guidance Documents</b>
Plan and Report (P&R 01	Integrated Support Plan (ISP)	<p>Statement of Requirement (SOR) at Annex A to the Contract.</p> <p>Authority DID 01 at Annex B to the Contract.</p> <p>ASD S3000L: International procedure specification for Logistic Support Analysis. Issue 1.1, Dated 01 Jul 2014.</p> <p>DEFCON 90 (Edn. 11/06) Copyright.</p> <p>DEFSTAN 00-040: Reliability and Maintainability (R&amp;M). Part No 1 – Management Responsibilities and Requirements for Programmes and Plans. Issue 8, Dated 28 Oct 2017.</p> <p>DEFSTAN 00-049: MOD Guide to R&amp;M Terminology Used in Requirements. Issue 4, Dated 17 Nov 2016.</p> <p>DEFSTAN 00-600: Integrated Logistic Support (ILS). Requirement for MOD Projects. Issue 1, Dated 14 Apr 2018.</p> <p>DEFSTAN 05-057: Configuration Management of Defence Materiel. Issue 7, Dated 28 Jul 2018.</p>
P&R 02	Support Analysis Plan (SAP) and associated annexes (Criticality Analysis, Level of Repair Analysis, Maintenance Task Analysis, Availability, Reliability and Maintainability Case and Support and Test Equipment Reports)	<p>Statement of Requirement (SOR) at Annex A to the Contract.</p> <p>Authority DID 02, 04, 05, 06, 08 and 13 at Annex B to the Contract.</p> <p>ASD S3000L: International procedure specification for Logistic Support Analysis. Issue 1.1, Dated 01 Jul 2014.</p> <p>DEFCON 82 (Edn. 01/11/16) Special Procedure For Initial Spares.</p> <p>DEFCON 90 (Edn. 11/06) Copyright.</p> <p>DEFCON 117 (Edn. 10/13) Supply of Information For NATO Codification and Defence Inventory Introduction.</p> <p>DEFSTAN 00-040: Reliability and Maintainability (R&amp;M). Part No 1 – Management Responsibilities and Requirements for Programmes and Plans. Issue 8, Dated 28 Oct 2017.</p> <p>DEFSTAN 00-042: Reliability and Maintainability Assurance Activity. Part No 3 – R&amp;M Case. Issue 5, Dated 03 March 2016.</p> <p>DEFSTAN 00-044: Reliability and Maintainability (R&amp;M) Data Collection and Classification. Issue 2, Dated 14 Dec 2012.</p> <p>DEFSTAN 00-045: Using Reliability Centred Maintenance to Manage Engineering Failures.</p> <p>DEFSTAN 00-600: Integrated Logistic Support (ILS). Requirement for MOD Projects. Issue 1, Dated 14 Apr 2018.</p>
P&R 03	Transition Management Plan (TMP)	<p>Statement of Requirement (SOR) at Annex A to the Contract.</p> <p>Authority DID 03 at Annex B to the Contract.</p> <p>DEFCON 90 (Edn. 11/06) Copyright.</p> <p>DEFSTAN 00-600: Integrated Logistic Support (ILS). Requirement for MOD Projects. Issue 1, Dated 14 Apr 2018.</p>

P&R 04	Supply Support Plan (SSP) and associated annexes (Initial Provisioning List, Deployment Spares Pack Report, Software Support Plan, Packaging Handling Storage and Transportation Report, Disposal and Hazardous Items Report, Obsolescence Management Plan, Technical Documentation Management Plan, Data Reporting Analysis and Corrective Action System Plan)	<p>Statement of Requirement (SOR) at Annex A to the Contract.</p> <p>Authority DID 09, 12, 14, 16, 17, 18, 19, 22 and 23 at Annex B to the Contract.</p> <p>BS ISO/IEC 12207: Information Technology, Software Life Cycle Processes.</p> <p>Condition 24 of the Terms and Conditions.</p> <p>DEFCON 82 (Edn. 01/11/16) Special Procedure For Initial Spares.</p> <p>DEFCON 90 (Edn. 11/06) Copyright.</p> <p>DEFCON 117 (Edn. 10/13) – Supply of Information For NATO Codification and Defence Inventory Introduction.</p> <p>Condition 23 of the Terms and Conditions.</p> <p>Condition 22 of the Terms and Conditions.</p> <p>DEFCON 658 (Edn. 10/2017) Cyber.</p> <p>Defence Logistics Framework (DLF).</p> <p>DEFFORM 68 (Edn. 01/12/16) Hazardous Articles, Materials or Substances Statement by the Contractor.</p> <p>DEFFORM 129A (Edn. 02/16) Application for Packaging Designs and Authorisation for Package Design Work.</p> <p>DEFSTAN 00-003: Design Guidance for the Transportability of Equipment. Issue 6, Dated 28 Feb 2017.</p> <p>DEFSTAN 00-044: Reliability and Maintainability (R&amp;M) Data Collection and Classification. Issue 2, Dated 14 Dec 2012.</p> <p>DEFSTAN 00-056: Safety Management Requirements for Defence Systems.</p> <p>DEFSTAN 00-600: Integrated Logistic Support (ILS). Requirement for MOD Projects. Issue 1, Dated 14 Apr 2018.</p> <p>DEFSTAN 05-057: Configuration Management of Defence Materiel. Issue 7, Dated 28 Jul 2018.</p> <p>DEFSTAN 05-132: Marking of Service Materiel Items Using a Unique Item Identifier (UII). Issue 1, Dated 28 Jun 2017.</p> <p>DEFSTAN 05-135: Avoidance of Counterfeit Materiel. Issue 1, Dated 10 Jul 2014.</p> <p>DEFSTAN 05-138: Cyber Security for Defence Suppliers. Issue 2, Dated 28 Sep 2017.</p> <p>DEFSTAN 61-021: Generic Specification for Batteries.</p> <p>DEFSTAN 81-041: Packaging of Defence Materiel.</p> <p>ISO 9001:2000. TickIT Guide. A Guide to Software Quality Management System Construction and Certification</p> <p>Obsolescence Management International Standard IEC 62402:2007, Dated 31 Aug 2007.</p> <p>STANAG 4329. NATO Standard Barcode Symbolologies. Issue 4.</p> <p>The Waste Electrical and Electronic Equipment (WEEE) (Waste Management Licensing) (England and Wales) Regulations 2006 SI No. 3315.</p>
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P&R 05	Quarterly Status Report (QSR) and associated annexes (Obsolescence Management (OM) Report and Data Reporting Analysis and Corrective Action System Report)	Statement of Requirement (SOR) at Annex A to the Contract. Authority DID 10 and 20 at Annex B to the Contract. DEFCON 90 (Edn. 11/06) Copyright. DEFSTAN 00-600: Integrated Logistic Support (ILS). Requirement for MOD Projects. Issue 1, Dated 14 Apr 2018. Obsolescence Management International Standard IEC 62402:2007, Dated 31 Aug 2007.
P&R 06	Training Needs Analysis (TNA) Report	Statement of Requirement (SOR) at Annex A to the Contract. Authority DID 07 at Annex B to the Contract. DEFCON 90 (Edn. 11/06) Copyright. DEFSTAN 00-600: Integrated Logistic Support (ILS). Requirement for MOD Projects. Issue 1, Dated 14 Apr 2018. JSP 822: Defence Direction and Guidance for Training and Education - Part 1, Dated Mar 2017.
P&R 07	Supportability, Test, Evaluation and Verification (STEV) Plan	Statement of Requirement (SOR) at Annex A to the Contract. Authority DID 21 at Annex B to the Contract. DEFSTAN 00-600: Integrated Logistic Support (ILS). Requirement for MOD Projects. Issue 1, Dated 14 Apr 2018.
P&R 08	Safety Case Part 2 and Associated Hazard Logs	Statement of Requirement (SOR) at Annex A to the Contract. Authority DID 25 at Annex B to the Contract. DEFCON 90 (Edn. 11/06) Copyright. DEFSTAN 00-055: Requirements for Safety of Programmable Elements (PE) in Defence Systems. Issue 4. Dated 29 Apr 2016. DEFSTAN 00-056: Safety Management Requirements for Defence Systems. Part No 1 – Requirements and Guidance. Issue 7, Dated 28 Feb 2017. Acquisition Safety and Environmental Management System (ASEMS). Land Systems Safety and Environmental Protection Regulations, Dated 21 Sep 2017.
P&R 09	Government Furnished Asset Management Plan (GFAMP)	Statement of Requirement (SOR) at Annex A to the Contract. Authority DID 24 at Annex B to the Contract. DEFCON 90 (Edn. 11/06) Copyright. DEFCON 694 (Edn 03/16) Accounting for Property of the Authority. DEFSTAN 05-099: Managing Government Furnished Equipment in Industry. Issue 1, Dated 14 July 2017.
P&R 10	Project Management Plan	Statement of Requirement (SOR) at Annex A to the Contract. DEFCON 90 (Edn. 11/06) Copyright.

P&R 11	Contractor's Master Test Plan (CMTP)	Statement of Requirement (SOR) at Annex A to the Contract. Acceptance Process at Annex M to the Contract. DEFCON 90 (Edn. 11/06) Copyright.
P&R 12	Validation and Verification Requirement Matrix (VVRM)	Statement of Requirement (SOR) at Annex A to the Contract. Cardinal Point Requirement Document (CPRD) at Annex U to the Contract. Acceptance Process at Annex M to the Contract. DEFCON 90 (Edn. 11/06) Copyright.
P&R 13	Design Proposal	Statement of Requirement (SOR) at Annex A to the Contract. Cardinal Point Requirement Document (CPRD) at Annex U to the Contract. DEFCON 90 (Edn. 11/06) Copyright.
P&R 14	Logistic Demonstration Plan	Statement of Requirement (SOR) at Annex A to the Contract. Cardinal Point Requirement Document (CPRD) at Annex U to the Contract. DEFCON 82 (Edn. 01/11/16) Special Procedure For Initial Spares. DEFCON 90 (Edn. 11/06) Copyright. DEFCON 90 (Edn. 11/06) Copyright. DEFSTAN 00-600: Integrated Logistic Support (ILS). Requirement for MOD Projects. Issue 1, Dated 14 Apr 2018. DEFSTAN 00-040: Reliability and Maintainability (R&M). Part No. 1 – Management Responsibilities and Requirements for Programmes and Plans. Issue 8, Dated 28 Oct 2017. DEFSTAN 00-042: Reliability and Maintainability Assurance Activity. Part No. 7 – Reliability Testing. Issue 1, Dated 10 Oct 2014. DEFSTAN 00-044: Reliability and Maintainability (R&M) Data Collection and Classification. Issue 2, Dated 14 Dec 2012.
CDR 001	Codification Data Report	Statement of Requirement (SOR) at Annex A to the Contract. Authority DID 12 at Annex B to the Contract. DEFCON 16 (Edn. 04/10) – Repair and Maintenance Information DEFCON 117 (Edn. 10/13) – Supply Of Information For NATO Codification and Defence Inventory Introduction Defence Logistics Framework (DLF). DEFSTAN 00-600: Integrated Logistic Support (ILS). Requirement for MOD Projects. Issue 1, Dated 14 Apr 2018. DEFSTAN 05-057: Configuration Management of Defence Materiel. Issue 6, Dated 07 Mar 2014.
CDR 002	Technical Publications	Statement of Requirement (SOR) at Annex A to the Contract. Authority DID 16 at Annex B to the Contract.

		<p>AESP 0100-P-005-010 - Specification for Army Equipment Support Publications Category Content and Layout Edition 4 Amendment 8, Dated 18 Dec 2015.</p> <p>DEFCON 15 (Edn. 02/98) – Design Rights and Rights to Use Design Information</p> <p>DEFCON 16 (Edn. 04/10) – Repair and Maintenance Information</p> <p>DEFCON 21 (Edn. 04/10) – Retention of Records</p> <p>Defence Logistics Framework (DLF).</p> <p>DEFSTAN 00-600: Integrated Logistic Support (ILS). Requirement for MOD Projects. Issue 1, Dated 14 Apr 2018.</p>
CDR 003	Training Pack	<p>Statement of Requirement (SOR) at Annex A to the Contract.</p> <p>Training Needs Analysis (TNA) Report, Plan and Report 07 at Annex C to the Contract.</p> <p>DEFCON 16 (Edn. 04/10) - Repair and maintenance Information</p> <p>DEFCON 21 (Edn. 04/10) - Retention of Records</p> <p>JSP 822: Defence Direction and Guidance for Training and Education - Part 1, Dated Mar 2017.</p>
CDR 004	Manufacturing Data Pack	<p>Statement of Requirement (SOR) at Annex A to the Contract.</p> <p>Authority DID 27 at Annex B to the Contract.</p> <p>DEFSTAN 00-600: Integrated Logistic Support (ILS). Requirement for MOD Projects. Issue 1, Dated 14 Apr 2018.</p> <p>DEFSTAN 05-010: Product Definition Information. Issue 7, Dated 14 Jun 2018.</p> <p>DEFCON 15 (Edn. 02/98) – Design Rights and Rights to Use Design Information</p> <p>DEFCON 21 (Edn. 04/10) – Retention of Records</p>



**PREFACE****INTEGRATED LOGISTIC SUPPORT (ILS)**

1. The ILS Plan has been produced to enable the Contractor to understand the Authority's approach to ILS and the procurement of a modified capability extension for the Man-Portable Surveillance and Target Acquisition Radar (MSTAR) through an Obsolescence Replacement Programme (ORP). This plan will be tailored through life focusing on the below aims and goals of ILS:

**AIMS & GOALS**

- 1.1 To deliver and maintain a fully supportable MSTAR ORP product that meets the Front Line Command (FLC) Key User Requirements (KURs), extending the capability out to a planned Out-of-Service Date (OSD) of [REDACTED].
- 1.2 To eliminate current and mitigate future MSTAR obsolescence issues.
- 1.3 To influence the current MSTAR Mark IV (Mk IV) System design as part of the modification extension by considering what impacts this will have on the Availability Reliability and Maintainability (AR&M) specifications on the equipment.
- 1.4 Identify potential enhancement opportunities, with the aim of reducing through life upkeep costs.
- 1.5 To influence the Support Design through the full utilisation of Supportability Analysis (SA)<sup>1</sup> techniques to produce a tailored Statement of Requirement (SOR), with the aim of achieving an optimum whole life cost Support Solution for the MSTAR ORP System.

**THE ILS CHALLENGE**

- 2 The main challenge facing the ILS discipline is the determination and implementation of a cost effective support design that is commensurable with the MSTAR System's behaviour, for its intended environment of use. This challenge also includes the evaluation of logistic resources for downtime events as part of design considerations for the System itself as well as the Support Solution. Design implications, therefore, will consider the upkeep of the System including its operation and maintenance through life. The ILS challenge has the following associated key challenges to be overcome:
  - 2.1 Management of the ILS programme and tailoring of SA activities, to enable the transition from the current MSTAR Mk IV technical baseline to the delivery of the modified capability extension MSTAR ORP technical baseline.
  - 2.2 Determination of realistic and relevant test performance measurement specifications to aid in the selection and performance monitoring of the product.
  - 2.3 Demonstrating that the product delivers against the aims and goals of ILS through life.
  - 2.4 Delivering a cost effective Support Solution that maximises resource efficiencies and realises any potential innovation opportunity.

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<sup>1</sup> Support Analysis (SA) is the primary means by which the objectives of ILS are achieved and its activities consist of a series of analytical tasks, Def Stan 00-600 refers. SA can also be known as Logistic Support Analysis (LSA), ASD 3000L refers.

**MSTAR ORP PROJECT**

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**PROJECT BACKGROUND**

- [REDACTED]
- 3 In [REDACTED], the MSTAR MkII fleet was upgraded in order to extend the service life until [REDACTED]. At that time [REDACTED] were identified for this programme and the contract was let to Thales UK to complete the upgrade. The primary Users of MSTAR are [REDACTED] although it may be used by other reconnaissance and surveillance elements as required.
- 4 In [REDACTED] [REDACTED] was allowed to lapse and [REDACTED] to support the remaining fleet by cannibalisation and salvage. In [REDACTED] MSTAR was declared obsolescent, with a declared Out-of-Service Date (OSD) of [REDACTED]. In [REDACTED], [REDACTED] to identify areas of obsolescence and to recommend the work package required to extend MSTAR Mk IV to an OSD of [REDACTED]. Under Phase 1 of this work package a prototype was produced for UK evaluation. Results of this evaluation are available on request and can be found in the [REDACTED].
- 5 MSTAR ORP is a capability extension programme and is classified as a Category C programme. This is not considered an enhancement programme in its own right but there will be enhancement opportunities as part of manufacturing out obsolescence issues with the current MSTAR Mk IV System to produce the new MSTAR ORP.

**REQUIREMENT FOR MSTAR**

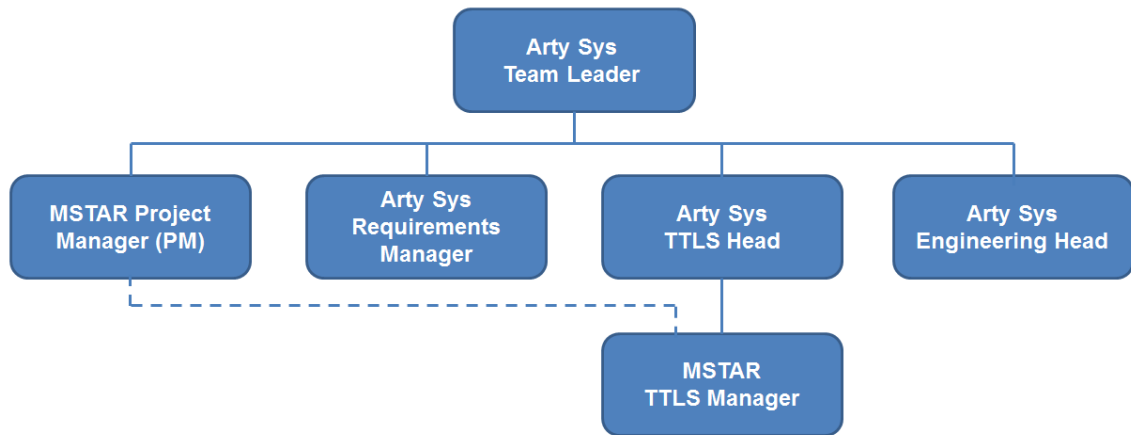
- 6 MSTAR ORP is to meet Front Line Command's (FLC) Land Fleet Requirements (LFR) of at least [REDACTED] Systems In-Service, in order to meet the military capability milestone of Full Operational Capability (FOC). It is planned to modify the current MSTAR Mk IV fleet through a managed transition phase. This phase will produce the In-Service ORP operational fleet and contribute towards Spares, including Forward Repair Pool (FRP) pre-determined forward stocks.

**STATEMENT OF MISSION NEED**

- 7 The Statement of Mission Need is defined as:
- To maintain the UK MSTAR capability through to the Out-of-Service Date (OSD) of [REDACTED].

**PROJECT TEAM**

- 8 Artillery Systems is a through life team located within [REDACTED]. Some of the key members of the team involved with the MSTAR project are shown in Figure 1 – Interfaces for MSTAR Project.

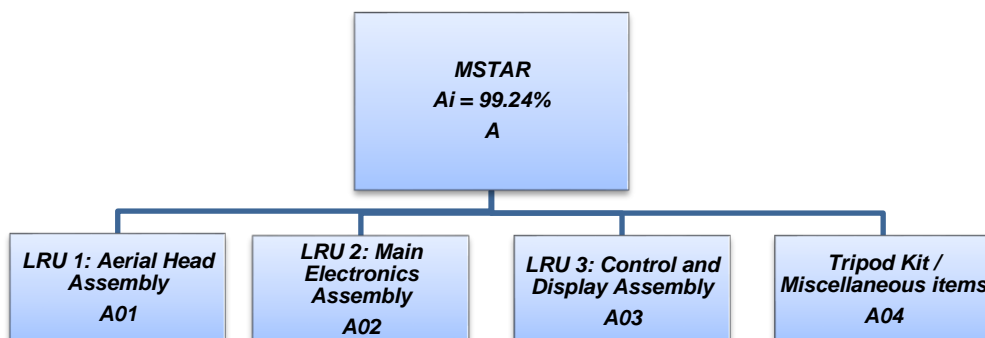
**Figure 1 – Interfaces for MSTAR Project Team****ILS MANAGEMENT**

- 9 The Arty Sys TTLS Head is responsible for ensuring that the MSTAR management team has a suitably qualified Technical Through Life Support Manager (TTLSM) in place. The TTLSM is to provide a support perspective to the activity and decisions of the team. The TTLSM shall ensure timely planning and action in a co-ordinated and economic manner, providing a focal point for the ILS programme elements and deliverables from the Contractor's Integrated Logistic Support (ILS) staff.
- 10 The ILS management programme will be used to monitor:
  - 11.1. The transition from MSTAR Mk IV to MSTAR ORP including opportunities for influencing System design by considering support cost drivers and Reliability and Maintainability requirements. This is to balance the User's Operational Availability requirements but at optimum whole life cost value for money decisions.
  - 11.2. The identification and acquisition of the most suitable Support Solution to meet the Authority's ILS Strategy while delivering value for money, and timing of resources for the equipment to enter service.
  - 11.3. The optimum training solution to be delivered, across the requirement, including the identification of resources, media and facilities to enable the training of suitably qualified competent personnel in the safe use and maintenance of MSTAR ORP.
- 11 Risk management is a key activity of the ILS programme and key support risks that are prevalent for MSTAR are, regarding selection of the product, being constrained by the Commercially off the Shelf (COTS) procurement strategy, noting:
  - 12.1. The COTS product fits within the Organic Infrastructure of the System.
  - 12.2. Support design will have to be robust for normal peacetime activities and yet agile to react to surge deployment scenarios in the User's capability requirements. Annex A to this document lists the Key Support Assumptions.

**SYSTEM ARCHITECTURE**

- 12 The current MSTAR Mk IV consists of three separate Line Replaceable Units (LRUs) and a Tripod Kit, as illustrated in Figure 2. The new MSTAR ORP will consist of the same Equipment Breakdown Structure (EBS).

**Figure 2 – Simplistic Equipment Breakdown Structure (EBS) / System Architecture**

**TRANSITION PHASE**

- 13 MSTAR ORP transition phase is intended to ensure the update of the existing UK MSTAR fleet without increasing the capability, except where that increased capability is a by-product of the obsolescence requirements.
- 14 The transition will consist of four distinct phases:
- 15.1. 'Planning' Phase. This will be the determining and agreement of the Transition management controls and processes, between both parties. This shall describe the transition from the start, 'Input' of MSTAR Mk IV Systems into the Contractor's facilities, to the end, 'Output', of MSTAR ORP Systems being receipted and In-inspected into the Authority's specified location.
- 15.2. 'Input' Phase. This will involve the inspection of MSTAR Mk IV Systems being receipted into the Contractor's premises in agreed quantities and tranches. Each tranche will be transported from the Authority's warehousing facility. The priority of Order of March (OoM) will be firstly from the non-utilised fleet to the later stages of pulling Systems In-use from the Authority's Reverse Supply Chain (RSC).
- 15.3. 'Manufacture' Phase. This will be the actual process of manufacturing MSTAR Mk IV obsolescence issues out of the System and monitoring regimes.
- 15.4. 'Output' Phase. This will involve the Contractor's quality control procedures, which will be subject to Audit by the Authority, to ensure the First of Type MSTAR ORP System that has undergone Manufacture is 'fit-for-purpose' and meets the Acceptance Criteria. All subsequent MSTAR ORP Systems that are manufactured, in [REDACTED] of agreed quantities, will be required to have a Certificate of Conformity to provide assurance that they meet the same criteria. Following delivery of the tranches, these will be fielded as per the Fielding Plan (Annex I to this document) with agreed final tranches being delivered as Operational Reserve and stored in the Authority's main depot warehouse.
- 15.5. 'Receipt In-inspection' Phase. This is for the in-inspection of equipment and materiel into the Unit and/or the Authority's warehousing facility [REDACTED]. This in-inspection process is performed by the User/Authority and will be defined in the Equipment Support Policy Directive (AESP Cat 111). The Contractor shall provide the necessary inspection information in order for the Authority to produce the ESPD.

**PROGRAMME SCHEDULE**

- 15 The Authority will seek the appropriate level of involvement from project stakeholders by having assured representation at Logistic Support Committee (LSC) meetings. LSCs will be timed to reflect the key support milestones and the transition phases from the current MSTAR Mk IV version to In-Service acceptance of the MSTAR ORP. In-Service LSC (ISLSC) meetings will ideally be held on a quarterly basis, or tailored to reflect the behaviour and trends of MSTAR, noting that the minimum number of reviews required per calendar year is two.
- 16 Contractor representation shall be required at LSCs to monitor and review progress of the ILS deliverables and support design against the agreed Statement of Requirement (SOR). ISLSC meetings will be combined with Incident Sentencing Panels, as detailed in Annex H to this document and the Meeting Matrix at Annex T to the Contract.
- 17 Support reviews against the Support Solutions Development Tool (SSDT) shall be conducted during all of the agreed key support milestones for acceptance into service. Following acceptance into service, which will be FLC's approval of Logistic Support Declaration (LSD), support reviews will be conducted bi-annually through life.
- 18 The Intended Support Outline Programme is shown below, which includes the key support milestones, which are subject to monitoring. This is to ensure completion of overall programme objectives, noting that the scheduled Initial Operating Capability (IOC) and Full Operating Capability (FOC) milestones are critical to maintain the overall capability.

**DELIVERING AGAINST THE ILS PROGRAMME**

- 19 The ILS programme will be used for successful delivery and monitoring of deliverables by the following work packages:
  - 20.1 Capture and defining of the ILS requirements to ensure any Invitation To Tender (ITT) has considered the value for money argument against tailoring of SA activities. These will be driven by the Authority's Statement of Requirement (SOR).
  - 20.2 Contracting the ILS Specification. This will be the ILS contractual information for including in the Invitation to Tender (ITT) as part of the SOR. The Authority shall host a Bidders' Conference in order to provide clarification on any of the information contained within the ITT, details of which can be found in DEFFORM 47.
  - 20.3 Implementing the Support Design. This will be the main work phase of both functional and logistic SA activities for the set-up and establishing of support and repair services. These shall align with the agreed Support Solution design for MSTAR ORP.
  - 20.4 Interoperability of the Support Design. This will include all of DLoD Logistic (Log) Pillar Approval/Assessment areas to ensure the Support Solution interfaces with all of the ILS elements and which will be scrutinised, based on the Supportability Case (SC) evidence.
  - 20.5 Acceptance of the Support Design. This will be based on key support milestones and for the through life upkeep of the MSTAR ORP System,

including Trend Analysis and AR&M Reports.

- 20.6 Develop a structured approach for acceptance of military capability. This will include divisions between MSTAR ORP acceptance between the Authority and the Contractor and FLC's requirement being met by DE&S (MSTAR Project Team). The Acceptance Strategy is detailed in the Acceptance Process at Annex M to the Contract, with further information given in the Integrated Test Evaluation and Acceptance Plan (ITEAP). This will be used to monitor the Contractor's performance of equipment specifications at the Factory Acceptance Test (FAT) and User Acceptance Trial (UAT).
- 20.7 As part of the structured approach for acceptance, the ILS drivers for testing will also be developed against the Statement of Requirement (SOR) for validation as part of contractual achievement against the AR&M Case Report arguments, culminating in a Reliability Demonstration Test against the agreed Battlefield Mission (BFM) as described at Annex B to this document.
- 20 The discipline of ILS, in the case of the MSTAR ORP, will be tailored to ensure the Support Solution is coherent across all of the Defence Lines of Development (DLoD). This discipline will be employed through life and as part of the Acceptance and Support milestones listed in the MSTAR ORP Intended Support Outline Programme.

### DEFINING THE ILS REQUIREMENTS

- 21 Defining of the ILS requirements will be driven by the Authority's ILS and Support Analysis (SA) Strategies. These requirements will be consistent with the ILS Challenges, addressing MSTAR ORP downtime events, in the development of an agreed cost effective Support Solution. Downtime includes any time during which equipment is taken offline due to requiring repair or replacement.

### SUPPORT STRATEGY - SUPPORT OPTIONS MATRIX (SOM)

- 22 Early analysis of the Support Options Matrix (SOM) indicates that the Support Solution that best fits MSTAR ORP is a combination of a Spares Exclusive Upkeep (SEU) and Spares Inclusive Upkeep (SIU) traditional regime, with the Contractor executing the Supply Support Services as defined in the Statement of Requirement at Annex A to the Contract. The ILS processes involved and the organisations responsible for each activity within the traditional support strategy are highlighted in Table 1. Further information on the Support Options Matrix (SOM) can be found in the DLF. This Support Option does not require an Enhanced Contractor Logistic Support (ECLS) Service.

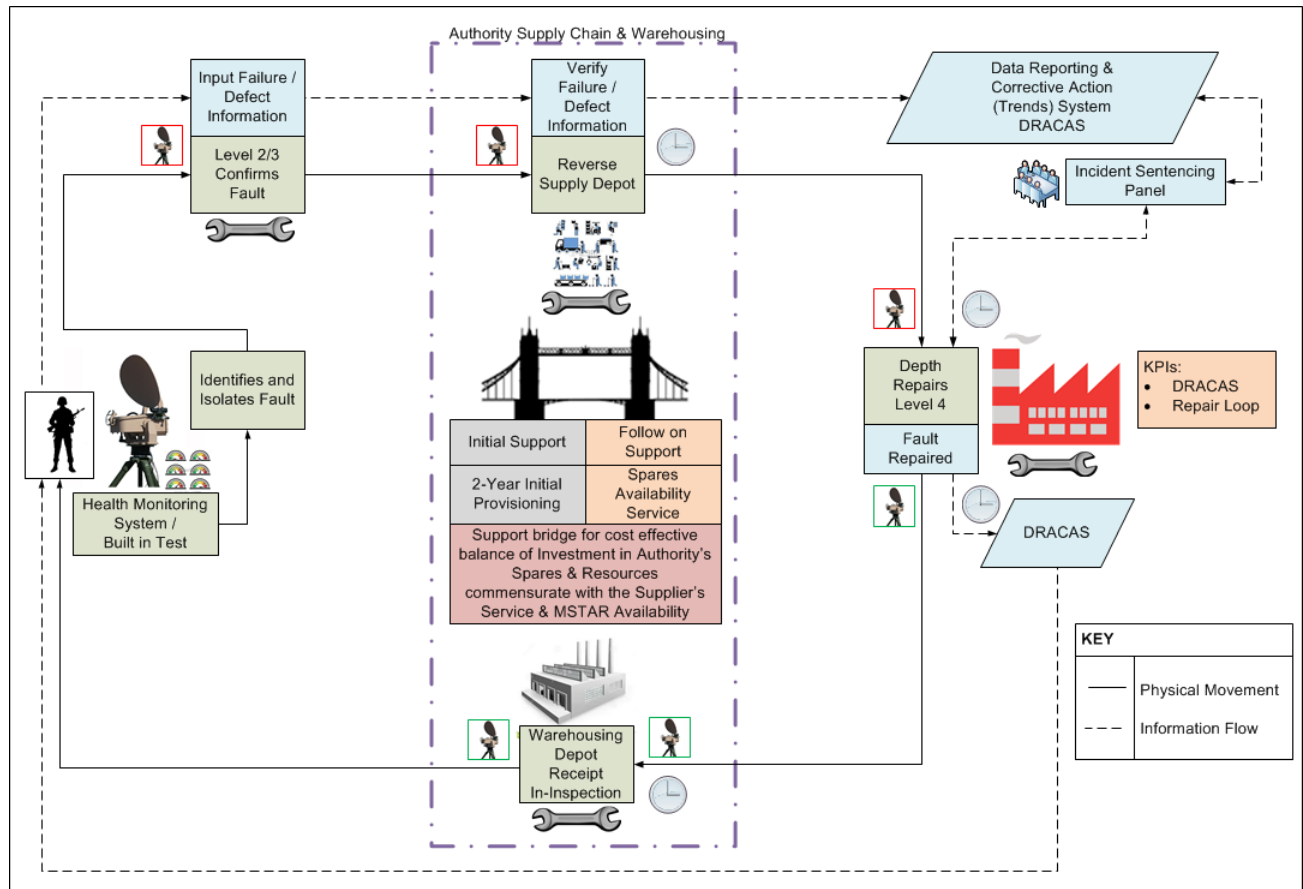
**Table 1 – Support Options Matrix – ILS Process mapping to lead organisation.**

Key: I = Can be Industry Lead; M = Must be MOD Lead; S = Shared process; B = Both (process undertaken separately)														
High Level Support Process	Traditional		Incentivised		Availability				Capability			Phase activity		
	SEU	SIU	UCR	RI	On BS	Off BS	On BS	Off BS	C	A	D	M	I	D
Develop Support Concept	M	M	S	S	S	S	S	S	Y	Y				
Develop Support Solution Definition	S	S	S	S	I	I	I	I		Y	Y	Y		
Implement Support System	M	M	M	M	I	I	I	I				Y		
Manage asset	M	M	S	S	I	I	I	I			Y	Y	Y	Y
Manage Maintenance	M	M	I	I	I	I	I	I			Y	Y	Y	Y
Manage Obsolescence	M	M	M	M	I	I	I	I		Y	Y	Y	Y	
Manage TLS Configuration	M	M	S	S	I	I	I	I	Y	Y	Y	Y	Y	
Manage TLS Information	M	M	S	S	S	S	S	S	Y	Y	Y	Y	Y	Y
Optimize Support	M	M	M	M	S	S	S	S				Y	Y	
Plan TLS	M	M	S	S	S	S	I	I	Y	Y	Y	Y	Y	Y
Manage Fleet	M	M	M	M	S	S	S	S			Y	Y	Y	
Provide TLS Training	M	M	M	M	B	B	I	I	Y	Y	Y	Y	Y	
Support Disposal	M	M	M	M	S	S	I	I					Y	Y

Note: The above table is generic and indicates the most common options. It must be tailored to meet individual project requirements.

- 23 The anticipated Support Solution to be adopted, therefore, shall be a full traditional regime which includes an initial three year provisioning of spares and a Contractor Repair Enabler Service, to support the MSTAR ORP System. The Authority's Support Strategy, and the Integrated Logistics activities involved, are shown in Figure 3.

**Figure 3. MSTAR ORP Support Strategy – iLog Activity**

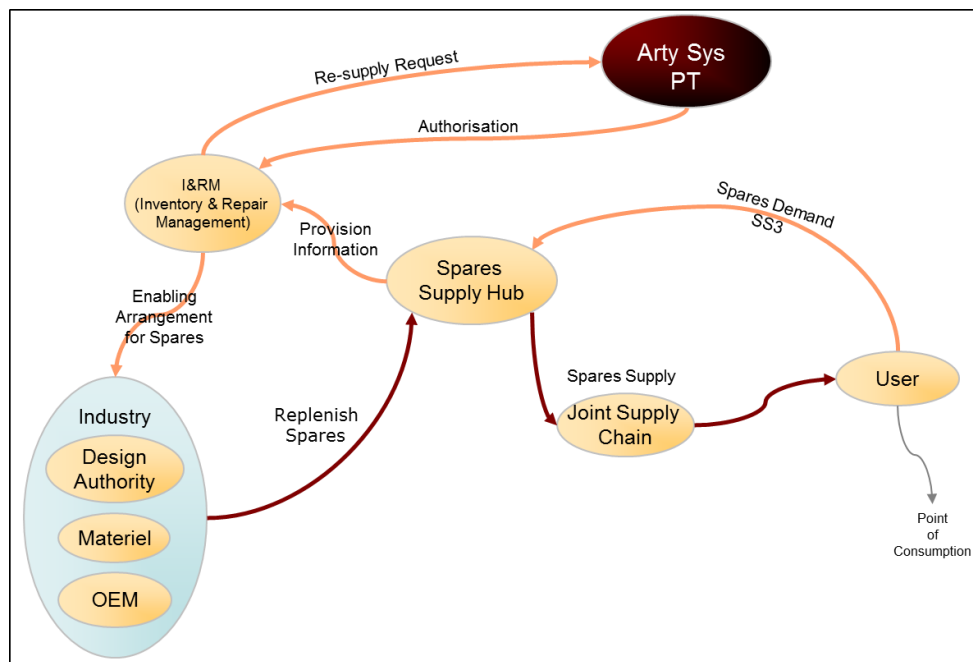


- 24 Required spares quantities are to be determined by the Contractor's Initial Provisioning Ranging and Scaling activities, and shall include the Deployment Spares Pack (DSP) (P&R 04b).
- 25 The initial three year provisioning period will cater for Trend Analysis for the Level of Repair Analysis (LoRA) review, in order to determine the optimal support strategy for the System from year four onwards. The level of repair shall be based on the Contractor's Support Analysis activities (P&R 02).
- 26 The Authority's transportation system will be used for movement of repairable LRUs back to the Contractor's depth repair (Level 4) location. Once repaired, the Contractor is responsible for forward transportation of materiel into the Authority's depot location.
- 27 All materiel is to be stored in, and transit through, the Authority's Warehousing Depot [REDACTED] as a traditional supply support regime for warehousing and distribution of stock. The Authority's spares demand and supply chain process is shown in Figure 4.
- 28 The traditional regime will require ILS deliverables, spares supply and support services from the Contractor for repair and upkeep of the System. Industry expert management services will be required for the design upkeep of the System.
- 29 Following the initial support period, the Authority will review the Support Strategy and Scale of Spares to ensure the Customer is receiving the optimum whole life cost Support Solution. At this stage, a full evaluation of the Data Reporting, Analysis and Corrective

Action System (DRACAS) will be conducted to review the effectiveness of the Support Solution and value for money to the Customer. Equipment Incident rates will be reviewed against the criteria given in Support Assumption 2 (Annex A to this document).

- 30 Determination of logistic resources and initial provisioning for the SEU/SIU regime is to be based on worst case assumptions. This is to enable the Support Solution to be robust for normal peacetime use and yet agile and able to react in a timely manner to responses for surge deployment scenarios. The intent being that the:
- 30.1 Support Solution will be cost effective against Contracted Supply Support services and Organic logistic resources that are utilised in the upkeep of the System.
- 30.2 The System can be deployed within stated Readiness Times for wartime operational use scenarios, with no costly re-design and/or no unforeseen logistic resource requiring investment.
- 31 The Support Strategy must be able to maintain MSTAR ORP In-Service operational effectiveness, with a minimum [REDACTED] when measured across the entire fielded fleet, whilst providing a capability with a cost effective solution through life until its planned OSD of [REDACTED]
- 32 The Logistic Support Committee (LSC) will be used to monitor agreed Logistic Support services. The LSC is chaired by the TTLSM with representatives from relevant Stakeholders and the Contractor to monitor performance of the ILS programme and discuss emerging issues; LSC Terms of Reference (ToRs) are detailed at Annex C to this document.
- 33 Incident Sentencing Panels, held in conjunction with LSC meetings, will be conducted to review DRACAS/Trend Analysis and Incident data, as detailed at Annex H to this document.

**Figure 4. Spares Demand and Supply Chain Process**



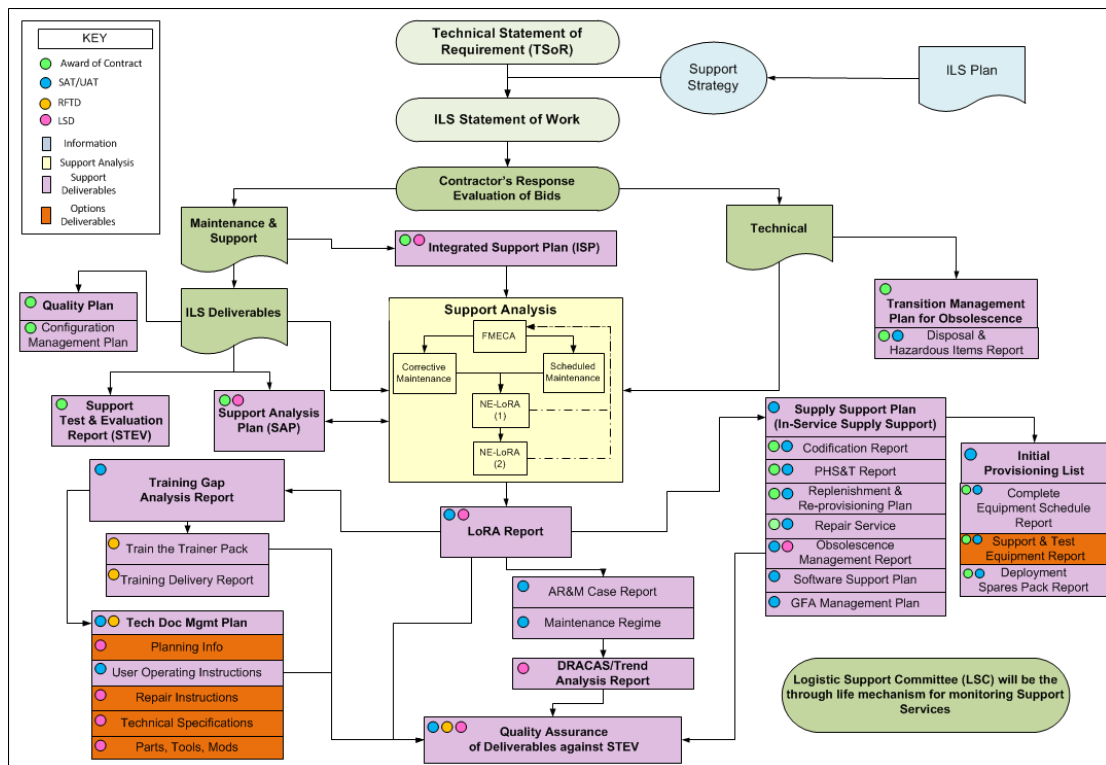
### **ILS STRATEGY**

- 34 The Authority's ILS Strategy is based on a limited SA mainly focusing on the production of an initial draft LoRA Report that is to be formally reviewed and validated to form a final, Post-validation LoRA.
- 35 ILS design parameters for consideration as part of the ILS requirements and



specifications are illustrated in Figure 5 - Authority ILS & SA Strategy.

**Figure 5 – Authority ILS & SA Strategy**



- 36 Failure Modes Effects & Criticality Analysis (FMECA), which is to be produced from Contractor provided output based evidence, is made available Pre- and Post-validation for agreement by the Authority. An example FMECA Worksheet is shown at Annex D to this document.
- 37 The follow-on activity from FMECA is the Level of Repair Analysis (LoRA). The Contractor shall conduct a limited Non-Economic LoRA (NE-LoRA) on the candidate Maintenance Significant Items (MSI) of MSTAR<sup>2</sup>. An example report is shown at Annex E to this document to this document.
- 38 The Authority's Maintenance Concept<sup>3</sup> is:
  - 38.1 For LoR Level 1 at location A, and for LoR Level 4 at location D, for the initial three years of support.
  - 38.2 This will be reviewed from Year 4 onwards, subject to review due to a possible change in candidate item maintenance policies based on In-Service gathered trend analysis logistic information.
- 39 The Contractor shall produce the initial draft LoRA Report based on the outputs of the Failure Modes Effects & Criticality Analysis (FMECA). This will be balanced between the Corrective and/or Scheduled/Preventative maintenance, and upkeep activity.
- 40 An Engineering Judgement Panel (EJP) shall be convened for the formal assessment and validation of the draft LoRA Report. The outputs of the initial LoRA will require re-evaluation of the FMECA following the EJP. The Contractor shall provide representatives at the EJP, as detailed in the Meeting Matrix at Annex M to the Contract.
- 41 Following the EJP, the Contractor shall deliver the final LoRA Report, which must be accepted by the Authority for LSD to be declared, to establish the logistic resource impacts for transition to In-Service.

<sup>2</sup> A definition of MSIs is given in the Definitions at Appendix 1 to the Statement of Requirement.

<sup>3</sup> Levels and Locations of Maintenance Concept are defined in the Definitions at Appendix 1 to the SOR and refer to the Battlefield Equipment Support Doctrine.

- 42 The LoRA shall be based on worst case usage assumptions to ensure any recommended Item Maintenance Policy is robust enough to support wartime operations but flexible to be adapted for cost effective peacetime support.
- 43 The LoRA outputs will provide the inputs into the Maintenance Task Analysis (MTA), AR&M Case and the final Support Analysis Plan (SAP), and will be used to influence the Support & Test Equipment, Training Needs Analysis, Technical Documentation and incident trend analysis, as defined in the Statement of Requirement at Annex A to the Contract.

#### ***ILS ELEMENT PLANS***

- 44 The candidate in-scope ILS Element Plans and Deliverables for MSTAR ORP are detailed in the Data Item Descriptions (DIDs) at Annex B, Plans and Reports at Annex C and Contract Data Requirements (CDRs) at Annex D to the Contract.
- 45 All candidate deliverables have been reviewed by the LSC Stakeholder community, Governing Policy (GP) Owners and/or Subject Matter Experts (SMEs). Stakeholder reviews have been used to confirm and agree the scope of deliverables to be contracted for. These have also determined the timing of deliverables against the maturity of the ILS programme.
- 46 Deliverables that have been agreed by Stakeholders will be tracked using a Status Tracker Tool as part of the Authority's assessment in the completion of the SC evidence. Contractual deliverables are detailed in the SOR, supplemented by their relevant CDR/Plans & Reports. All deliverables will be subjected to formal reviews and LSC assessment panels Post-ITT response for Contract Award and acceptance of the deliverable as part of the ILS programme.
- 47 Availability, Reliability and Maintainability. AR&M shall be managed throughout all phases of the MSTAR ORP and ORP In-Service programme. Data Reporting, Analysis and Corrective Action System (DRACAS) as detailed in Annex G of this ILS Plan, shall be used up to the declaration of IOC. This shall be a database managed by the Contractor with the Authority having access to. Following acceptance by the Authority that the AR&M requirements have been satisfied and demonstrated for acceptance into service, DRACAS Reports will revert to In-Service Trend Analysis Reports.
- 48 Incident Sentencing Panels, as shown at Annex H of this ILS Plan, will be used for the formal qualification and Acceptance of incident sentencing by the Authority. This shall confirm the Contractor has delivered against the AR&M requirements and/or qualify areas that the Contractor must address, in order for the Authority to accept delivery. The Incident Sentencing Panels therefore will fully evaluate all incidents recorded or noted that occurred during the Reliability Demonstration Test (RDT), ascertaining their cause, applicability, severity and impact on the System and the justification for passing/failing the RDT.
- 49 Incident Sentencing Panels will ideally be convened on a quarterly basis, and at least bi-annually, during the 'In-Service' phase, in conjunction with LSC meetings, for monitoring of Incidents being reported by the User for the measuring of In-Service System AR&M performance against the System design specification, in accordance with the Statement of Requirement. Additionally, Incident Sentencing Panels will be used for the monitoring of Contractor provided Repair services, agreeing any resolution action.
- 50 In-Service AR&M data management shall be a combination of the Contractor's Trend Analysis Report and associated supplementary evidence, the Authority's Failure Reporting, Analysis and Corrective Action System (FRACAS) and the Authority's Joint Asset Management & Engineering Solutions (JAMES) Database.
- 51 Incident Sentencing Panels will also be used for identifying potential Post Design Services for any required modifications and upgrades to the System.
- 52 A key element of agreeing resolution actions will be the review of AR&M design data including FMECA reviews.
- 53 Training Needs Analysis. Contractor to conduct Training Needs Analysis (TNA) of the tasks and procedures in the daily operation, Upkeep and maintenance of the System in

accordance with the current Level 5 Training Objectives in agreement with the Authority. TNA and Draft Training Packs are to be audited by [REDACTED].

#### **THE ILS SPECIFICATION**

- 54 The SOR and DIDs will be used to specify the Authority's ILS deliverables, plans and reports for the Contractor to respond to.

#### **ILS ACCEPTANCE**

- 55 Assurance of ILS Acceptance will be supported by assessment of the Authority's produced Support Assumptions, as detailed in Annex A of this ILS Plan, with further information given in the Integrated Test Evaluation and Acceptance Plan (ITEAP). This will be based on the evolving support design against the Support Solutions Envelope (SSE) criteria. The Support Solutions Development Tool (SSDT) will be used to assess the maturity of support for the approval of each key milestone, as defined in the ITEAP.
- 56 The SSDT therefore will be used by the Authority as the Supportability Case (SC) evidence negating the need for a separate SC deliverable from the Contractor. Contractual deliverables will therefore be an essential element of the SC evidence for formal assessment and assurance by FLC (Equipment Capability Logistic Plans).
- 57 The SSDT will be available for scrutiny throughout the entire programme cycle, with support reviews conducted at pre-ITT to ensure relevant ILS elements have been included and post-ITT to validate Contractor responses.
- 58 Logistic Support Declaration (LSD). LSD is the key support milestone that must have all support risks mitigated to an agreed level enabling FLC to take MSTAR ORP into service. The Key Support Areas that must be addressed with agreed resources in place for declaration of LSD are as follows:
- 58.1 Pre-User Trial Training. Pre-User Trial Training to be delivered by the Contractor to the Authority upon the release of the first MSTAR ORP system that passes through the manufacture phase to allow the FAT/UAT to be conducted.
- 58.2 Train the Trainer (T3). T3 training to Instructor community by Contractor accepted and delivered to allow for cascade training, and T3 media enabling courses validated as fit-for-purpose by the Training DLoD owner. T3 courses are expected to occur at one [REDACTED] for a maximum capacity of [REDACTED].
- 58.3 Unit Personnel Trained. Courses run at Units by authorised Instructors in the daily operation, Upkeep and maintenance of the System to enable fielding of MSTAR ORP as specified in the Fielding Plan OoM.
- 58.4 Codification. All Items of Supply agreed as candidates for codification have been codified and agreed with the Codification Authority.
- 58.5 Spares. The agreed Range Scale of Spares contained in the IPL have been procured and delivered to meet the Fielding Plan of MSTAR ORP (Annex I to this document). Scale of Spares shall sustain an [REDACTED], when measured across the entire fielded fleet.
- 58.6 Deployment Spares Packs (DSP). The agreed Range and Scale of Spares contained in the DSP Report have been procured by the Contractor and delivered to the Authority's Warehousing Depot to meet the first [REDACTED] DSP Spares shall also have been earmarked by the provisioners preventing use of these Spares for normal peace/training activities.
- 58.7 Sustainability Planning. Contingency planning identifying any additional support resource or Contractor provided service has been mitigated sufficiently to ensure MSTAR ORP Operational Availability levels are maintained in the event of MSTAR ORP being required to deploy on an Operational deployment, in time to meet Unit readiness times.

- 58.8 Complete Equipment Schedules (CES). All CES parts shall be easily identifiable by the user with each part having supporting photographs converted to diagrams, in addition to the part number and codification details.
- 58.9 All CES items will have passed user tests pertaining to their suitability and functionality in the operation of the system and associated power, rechargeable elements including the integration with associated systems and the Authority's existent facilities both in and out of barracks.
- 58.10 Packaging, Handling, Storage & Transportation (PHS&T). All Items of Supply entering the Joint Support Chain (JSC) are packaged and labelled to an agreed level, including identification of any special handling warning for hazardous items requiring special transportation measures (Annex F to this document).
- 58.11 All Repairable MSIs have been labelled with the Serial number details on the items themselves (not on the containers) to meet the 2D Barcoding STANAG.
- 58.12 Operation of MSTAR ORP. All Level 1 User/Operator tasks have been validated by the Equipment DLoD owner and detailed in the relevant publication.
- 58.13 Maintenance of MSTAR ORP. All Level 1 User/Operator Corrective and Scheduled tasks have been validated by the Equipment and Logistic DLoD owners and detailed in the relevant publication.
- 58.14 Support and Test Equipment (S&TE). All necessary support equipment has been identified and, where required, detailed in the relevant publication, codified, procured and in place to meet the Fielding Plan of MSTAR ORP.
- 58.15 Repair. Depth repair support services have been agreed between the Contractor and the Authority, established and in place in time to enable the fielding of MSTAR ORP to sustain an [REDACTED] when measured across the entire fielded fleet.
- 58.16 Supply Agreements. Service Level Agreements (SLAs) in place for Land Equipment common items and Joint Business Agreements (JBAs) in place for Joint common associated items of the MSTAR ORP Range of Spares.
- 58.17 Supply Agencies. Provisioning services agreed and established with Babcock DSG identifying the level of service to be provided in time for the fielding of MSTAR ORP. Similarly warehousing agreements in place with [REDACTED] identifying the volume of traffic and any storage and maintenance requirements. Any change in design that affects stores or logistic services is to be communicated to [REDACTED] through a Requirements Change Form (RCF).
- 58.18 Contractor Supply Services. The level of service established and agreed and documented in Supply Support Plan (P&R 04).
- 58.19 Technical Publications. Publications have been Verified and Validated by the incumbent Military Technical Engineering Specialist as part of the agreement process, and delivered to the agreed AESP category. Additionally all in-scope publications shall have been published on Technical Documentation Online (TDOL) by the Authority.
- 58.20 Software Updates. The deployment of any required software updates will be agreed between the Contractor and Authority, including the media and method used. The appropriate fielding method will depend on the security classification of the software.
- 58.21 Logistic Information DRACAS. A DRACAS System establishment with the Contractor and demonstrated to prove the mechanisms of the Incident Sentencing Panel and information requirements in the reporting, sentencing and resolving of Incidents and Observations are in agreement with all parties.
- 58.22 Logistic Information Joint Asset Management & Engineering Solutions (JAMES). Roles and Responsibilities have been identified for Authority and

User level.

- 58.23 MSTAR ORP Technical Through Life Support Manager (TTLSM) is trained in the following JAMES roles: Project Team, Repair Manager and Senior Equipment Manager.
  - 58.24 MSTAR ORP has been birthed onto JAMES and placed in Artillery Systems holdings for onward dispatch to the receiving unit in line with the Fielding Plan and published in the Equipment Support Policy Directive AESP cat 111.
  - 58.25 The User Operator, System Administrator and Maintainer schedules and corrective Standard Tasks are uploaded onto JAMES.
  - 58.26 The Equipment Breakdown Structure (EBS) of MSTAR ORP has been uploaded onto JAMES. This will show each MSTAR ORP being matched with the MSI LRU that has been agreed for JAMES management.
  - 58.27 Unit personnel Validated by FLC as being trained in use of JAMES including being competent in the process of reporting Incidents using the JAMES Component Report (JCR).
- 59 Initial Operating Capability (IOC). IOC is defined as equipment delivered; [REDACTED] MSTAR ORP Systems fielded to the Very High Readiness (VHR) Brigades and [REDACTED] training unit, in accordance with the Fielding Plan at Annex I to this document. T3 package accepted and delivered to allow for cascade training, with an initial support regime in place, which is relevant across the agreed levels of repair.
- 60 Full Operating Capability (FOC). FOC is defined as all entitled Units having receipted their MSTAR ORP Systems [REDACTED] complete to CES with units trained to CT3 and a steady state training regime in place, with all Spares and Supply Support services established including warehousing of centrally held stocks.

#### **SUMMARY**

- 61 This ILS Plan has specified the Authority's Aims and Goals of ILS, with the required information to enable the completion of contractual documents to ensure:
- 61.1 Man-Portable Surveillance and Target Acquisition Radar (MSTAR) Obsolescence Replacement Programme (ORP) product is supportable and that it meets the Front Line Command (FLC) military capability of the Logistic DLoD pillar, meeting the User's Operational Availability requirements.
  - 61.2 Has manufactured out all identified Obsolescence and Obsolete Issues to extend the capability out to a planned Out-of-Service Date (OSD) of [REDACTED]
  - 61.3 Has fully utilised Support Analysis techniques, influencing the System and Support design providing an optimum cost effective Support Solution through life.

**ANNEXES**

Annex A - Supporting Data Assumptions and Support Factors

Annex B - Reliability Demonstration Test (RDT)

Annex C - Logistic Support Committee (LSC) Terms of Reference

Annex D - FMECA - Maintainability Information and FMECA Worksheet

Annex E - NE-LoRA Report Template

Annex F - Packaging, Handling, Storage & Transportation (PHS&T)

Annex G - Through Life Data Recording, Analysis and Corrective Action System (DRACAS)

Annex H - Incident Sentencing Panel Terms of Reference

Annex I - Fielding Plan

**SUPPORTING DATA ASSUMPTIONS AND SUPPORT FACTORS**

1. Supporting data for the determination of the Support Solution including Initial Provisioning and determination of Supply Support Services to be provided by the Contractor is shown below:

**Table 2 – Support Assumptions**


Serial	Assumption		
1.	<p><b>Disposal</b></p> <p>Items dispatched for manufacture into the Obsolescence Replacement Programme (ORP) will be disposed of by the Contractor. Items not dispatched will be disposed of via the Defence Equipment Sales Authority (DESA).</p> <p>Defence Instructions and Notices (DIN) will be published by the Authority to inform User Community of items being disposed.</p> <p>'In-Service' DESA will be used for the disposal of MSTAR ORP for its OSD.</p> <p>Any Hazardous items that have been incorporated into the MSTAR ORP system as part of the Manufacture phase need to be highlighted to the Authority. A disposal plan will be produced by the Authority (through agreement with the DESA) once the Contractor has identified these materials.</p>		
2.	<p><b>Equipment Incidents – Repair Enabler Service</b></p> <p>A. Repairable LRUs that are sentenced as Accident Misuse Negligence and Damage (AMN&amp;D) will be repaired under the Contractor's Level 4 Depth location</p> <p>B. Repairable LRUs that are lost or damaged Beyond Economic Repair (80% of the original procurement investment cost) will be highlighted to the Authority by the Contractor</p> <p>C. Repairable LRUs that are sentenced as No Fault Found (NFF) will be highlighted to the Authority by the Contractor</p> <p>D. All LRUs that are sentenced as Attributable Failures shall be monitored under the Contract Key Performance Indicators (KPIs)</p> <p>E. Initial three year support period to cater for Trend Analysis (TA) for the LoRA review</p> <p>*Incident rates to be reviewed and agreed for the Spares Analysis</p>		
3.	<p><b>Equipment Maintenance</b></p> <table border="1" data-bbox="371 1205 1404 1832"> <tr> <td data-bbox="371 1205 898 1832"> <p><b>Active Repair Times</b></p> <p>A. Level 1 – Up to 0.5 hours and/or conducted so as not to interfere with tasking of equipment. Must not exceed 2 hours as are conducted forward (F Echelon).</p> <p>B. Level 2 – Up to 2 hours conducted forward. Can exceed 2 hours but in agreement with Authority.</p> <p>C. Level 4 - There is no duration limitation of time to repair associated with Level 4 except that these tasks are generally considered to be in excess of 12 hours and are conducted at depth locations. All Software repair times will be escalated to Level 4.</p> <p><b>Depth Repair Time</b></p> <p>Repairs will not exceed a maximum repair turnaround time of 180 days from the point at which the LRU enters the Contractor's premises until the repaired item is receipted back into the Authority's warehousing depot. This repair time will be reviewed as part of the Key Performance Indicators.</p> </td><td data-bbox="898 1205 1404 1832"> <p><b>Administration Logistic Delay Time (ALDT)</b></p> <p>The following ALDTs may be experienced:</p> <p>A. Level 1 (F Echelon) – 2 hours</p> <p>B. Level 2 (A2 Echelon) – 6 hours</p> <p><b>Transportation Delays Between Lines</b></p> <p>A. F Echelon – A2 Echelon: 24 hours</p> <p>B. A2 Echelon – Brigade: 48 hours</p> <p>C. Brigade – Divisional lines: 48 hours</p> <p>Please note: Repair levels and locations are defined in Definitions at Appendix 1 to the Statement of Requirement.</p> </td></tr> </table>	<p><b>Active Repair Times</b></p> <p>A. Level 1 – Up to 0.5 hours and/or conducted so as not to interfere with tasking of equipment. Must not exceed 2 hours as are conducted forward (F Echelon).</p> <p>B. Level 2 – Up to 2 hours conducted forward. Can exceed 2 hours but in agreement with Authority.</p> <p>C. Level 4 - There is no duration limitation of time to repair associated with Level 4 except that these tasks are generally considered to be in excess of 12 hours and are conducted at depth locations. All Software repair times will be escalated to Level 4.</p> <p><b>Depth Repair Time</b></p> <p>Repairs will not exceed a maximum repair turnaround time of 180 days from the point at which the LRU enters the Contractor's premises until the repaired item is receipted back into the Authority's warehousing depot. This repair time will be reviewed as part of the Key Performance Indicators.</p>	<p><b>Administration Logistic Delay Time (ALDT)</b></p> <p>The following ALDTs may be experienced:</p> <p>A. Level 1 (F Echelon) – 2 hours</p> <p>B. Level 2 (A2 Echelon) – 6 hours</p> <p><b>Transportation Delays Between Lines</b></p> <p>A. F Echelon – A2 Echelon: 24 hours</p> <p>B. A2 Echelon – Brigade: 48 hours</p> <p>C. Brigade – Divisional lines: 48 hours</p> <p>Please note: Repair levels and locations are defined in Definitions at Appendix 1 to the Statement of Requirement.</p>
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4.	<p><b>Equipment Usage In-Service (excluding Operations)</b></p> <p>██</p> <p>██</p> <p>██</p>		

Serial	Assumption	
5.	<b>Equipment Usage on deployment (Operations)</b> <div style="background-color: black; height: 15px; width: 100%;"></div> <div style="background-color: black; height: 15px; width: 100%;"></div> <div style="background-color: black; height: 15px; width: 100%;"></div> <div style="background-color: black; height: 15px; width: 100%;"></div> <div style="background-color: black; height: 15px; width: 100%;"></div> <div style="background-color: black; height: 15px; width: 100%;"></div> <div style="background-color: black; height: 15px; width: 100%;"></div> <div style="background-color: black; height: 15px; width: 100%;"></div>	
6.	<b>Health, Safety and Environmental</b>  The Authority has no general exemptions from the provisions of UK Health, Safety and Environmental regulations. Equally applicable to all personnel is the handling and transportation of materiel and equipment in all types of working environments, both in peacetime and wartime conditions. Inspection, Maintenance or Use procedures must therefore comply with current UK regulations.  MSTAR ORP will comply with current regulations and any potential hazard shall be subject to review for agreement by the Authority before the product is accepted into service	To be evaluated and assessed through all stages of the project to ensure the MSTAR ORP meets current regulations and any risk is formally agreed as being As Low As Reasonably Practicable (ALARP).  Health and Safety requirements will be clarified based on assessment of Bidders' ITT responses and documented within the Contractor's Safety and Environmental Case Report (SECR) Part 2.
7.	<b>Human Factors Integration (HFI)</b>  HFI is probably one of the most important areas of the MSTAR ORP. Unless the equipment is simple to use and maintain it is unlikely to be operated effectively in the battle space.  MSTAR ORP capability extension will not require a new set of HFI requirements other than those for the Obsolete System. As a minimum a HFI Review is to be undertaken as part of the Product's Support Analysis.	HFI will be evaluated through all stages of the project to ensure the MSTAR ORP meets the Users' requirements and is simple to operate and maintain in all specified environments of use.  HFI will be assessed as part of Bidders' ITT responses and at FAT, with final testing at UAT.
8.	<b>Infrastructure</b>  MSTAR ORP will not require any investment in facilities or the Authority's organic supply chain in the upkeep of the system.	This may change from Year 4 onwards should In-Service monitoring suggest the LoRA requires review.
9.	<b>Logistic Information Management</b>  Authority owned Logistic Information Systems (LogIS) shall be used as part of the SEU regime. Contractor provided LogIS that is to be transmitted must be Security compliant and data formatted to be interoperable with the following LogIS: <ul style="list-style-type: none"> <li>• Base Inventory Management System (BIMS)</li> <li>• Failure Reporting Analysis and Corrective Action System (FRACAS)</li> <li>• Joint Asset Management Engineering System (JAMES)</li> <li>• Codification Support Information System (CSIS) owned by UKNCB</li> <li>• Management of the Joint Deployed Inventory (MJDI)</li> <li>• Contracting, Purchasing and Finance (CP&amp;F)</li> </ul>	Maximum use of Authority's SEU/SIU regime, with Contractor delivering agreed information, will be detailed as part of the Logistic Information Management sections of the Integrated Support and Supply Support Plans.



Serial	Assumption	
10.	<b>Logistic Support Organisation (LSO) – Supply Support</b> <p>A. Warehousing location for the storage and distribution of Spares and codified Items of Supply shall be [REDACTED]. This will have the capability to store the full three year purchased inventory, in accordance with DEFCON 82 (Edn. 01/11/16) Special Procedure For Initial Spares.</p> <p>B. Fielded Units have limited local store warehousing capability of up to five days of usage of 12 hours per day.</p>	
11.	<b>LSO – Operational deployments</b> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p>	
12.	<b>Security</b> <p>[REDACTED].</p> <p>Further information regarding security can be found in the Security Aspects of the Contract.</p> <p>Information being transmitted between the Contractor and Authority must comply with Cyber Security regulations.</p> <p>DEFSTAN 05-138 (Cyber Security) and DEFSTAN 05-135 (Avoidance of Counterfeit Materiel) apply here as precursors to DEFCON 658 (Edn. 04/17) Cyber.</p>	<p>The system will include a Control Display Assembly (CDA) laptop used to display the radar picture. The CDA must have endorsed security controls.</p> <p>Contractor provided software and firmware shall be interoperable with the CDA laptop.</p>

Serial	Assumption	
13.	<b>Supply Chain Times</b> <div>[REDACTED]</div>	
14.	<b>Supply Chain Times - Operations</b> <div>[REDACTED]</div>	
15.	<b>Supply Warehousing of Stock</b> <div>[REDACTED]</div>	<p>No extra facilities will be required in the storage of MSTAR ORP materiel other than the capture of volumetric and maintenance information for storage of items for the Supply Support service and items earmarked as candidates for DSPs and/or Repair Pools.</p> <div>[REDACTED]</div>

Serial	Assumption	
16.	<p><b>Support &amp; Test Equipment (S&amp;TE)</b></p> <p>Requirements for tools or test equipment are to be kept to a minimum and maximise standardisation of fixtures and fixings. Should S&amp;TE be required the aim is to have a single type of tool, minimising logistic resources.</p> <p>Level 1 S&amp;TE will be part of the MSTAR ORP agreed Complete Equipment Schedule (CES) as loose items and documented in the technical publication AESP 741 category. Repair levels are defined in the Definitions at Appendix 1 to the Statement of Requirement.</p> <p>S&amp;TE required for Combat Service Support (CSS) Level 2 trade personnel will require the production of an Equipment Table and documented in the agreed technical publication category.</p> <p>Wherever a requirement exists for tools or test equipment they should be from existing Authority holdings.</p>	<p>The Contractor's Support Analysis Plan will be assessed as part of Bidders' ITT responses and evaluation undertaken as part of the Product's Support Analysis before any proposed S&amp;TE is accepted by the Authority.</p> <p>It is assumed that all loose tooling will be fully screened to ensure there are no similar Government Furnished Equipment (GFE) items in existence that can be utilised to perform the maintenance, repair, and upkeep action.</p> <p>CSS trade personnel have toolboxes allocated containing common hand tools applicable to their trade. Toolbox contents for these groups and current GFE S&amp;TE held at Level 2 locations will be scrutinised before any new S&amp;TE is considered as a candidate for Ranging and Codification.</p>
17.	<p><b>Training / Training Facilities</b></p> <p>No extra or additional facilities are required to conduct training in the Authority's training facilities.</p> <p>No special to arm Level 2/3 (CSS) equipment training courses will be required.</p> <p>MSTAR ORP will adopt the Train the Trainer (T3) for initial and continuous competency for User Operator Level 1 courses.</p>  <p>The Contractor will provide a training pack for the training community, which will be tailored to suit delivery to each audience community by the Authority.</p>	<p>To be reviewed during the Product's Support Analysis with endorsement by the Authority's Training DLOD owner.</p> <p>Training Equipment requirements and simulators are to be reviewed post-delivery of MSTAR ORP as a potential PDS task. User to Update Requirements documentation to allocate funding for task creation.</p>
18.	<p><b>Transportation</b></p> <p>MSTAR ORP System is assumed to move within all modes of transport (Air, Road, Rail and Sea) in the Authority's support chain and deployed battle space.</p> <p>STCs will be required for its various modes of transportation.</p> <p>Dangerous Air Cargo will require special handling. Any items classified as Dangerous Air Cargo that are incorporated into the MSTAR ORP System as part of the Manufacture phase must be highlighted to the Authority.</p>	<p>2D Barcoding for all 'P' Class MSIs only – to be labelled on the items themselves, not on the STCs.</p> <p>System will not require any special tie-downs as assumed to be moved as within the relevant mode of transport within its STC and can be moved as palletised shipments in all modes of transport, including under-slung loads.</p>
19.	<p><b>Trials – Acceptance</b></p> <p>The conduct of Reliability and Maintainability Tests will not require additional investment in the Authority's facilities.</p> <p>FAT/UAT are to be conducted in the Authority's specified UK location and will be specified in the Authority's Acceptance Strategy.</p>	<p>The Acceptance Strategy is detailed in the Contract Terms and Conditions and the Acceptance Process, with further information given in the Integrated Test Evaluation and Acceptance Plan (ITEAP).</p>

**Reliability Demonstration Test (RDT)**

1. Population size of the test will consist of [REDACTED]. The duration of the test will be over a [REDACTED] as detailed in Table 3. The test results will be baselined against one MSTAR ORP pre ORP System, which will also be required to undergo the test. The Contractor is required to provide representatives, in addition to all the required spares, to support the Systems for the duration of the trials.
2. [REDACTED]. The Incident Sentencing Panel, which is chaired by the Authority, shall have the final decision on whether the test has been passed or failed, depending on the classification of incidents as defined below.
3. Failure of the RDT will result in a new test being held to verify the Authority's acceptance that the AR&M requirements have been met by the Contractor. Any Incident resulting from GFE equipment will be outside of the measurement and not counted. Additionally, where an Incident is sentenced as misuse by the Incident Sentencing Panel against draft manuals or technical publications, these will also be outside of the measurement and not counted.
4. The MSTAR BFM is based on a [REDACTED], which is detailed in Table 3 and contains the following aggregates:  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

## Incident Classification and Definitions

- A2

**LOGISTIC SUPPORT COMMITTEE (LSC)****TERMS OF REFERENCE (ToRs)**

1. The purpose of the Logistic Support Committee is a formal gathering held to discuss support matters through life.
2. The aims of the Logistic Support Committee (LSC) are:
  - 2.1. To develop and refine criteria for the planning of key ILS milestones as part of logistic pillar approvals; Main Gate (MG), Logistic Support Declaration (LSD) and In-Service Reviews (ISR), in event of changes to the product design or Support Solution, and/or provider.
  - 2.2. Agree that the Integrated Support Plan (ISP) produced by the Contractor meets the contracted Def Stan 00-600 ILS requirements.
  - 2.3. Develop ILS schedule of work to meet the requirements in the Statement of Requirement (SOR).
  - 2.4. Monitor and agree progress of activities to meet the ISP and identify support risks, allocating responsibility. Implement mitigations to a level that is as low as reasonably practicable and monitor mitigation progress.
  - 2.5. Monitor progress of ILS tasks against the Schedule of Requirements and contracted requirements.
  - 2.6. To develop fielding plans, usage assumptions that will form the building blocks of quantifying support factors for conducting Support Analysis. The development and authorisation of the Use Study.
  - 2.7. To identify logistic support implications of the introduction or upkeep of equipment In-service.
  - 2.8. Examine cost options and trade offs for the provision of Logistic Support.
  - 2.9. Assist with the development of information requirements for the Logistic Information Repository (LIR).
  - 2.10. Review and approve the supportability case by providing a framework of evidence for KSA GP SME review in the development and upkeep of the case, using an agreed Support Solutions Development Tool (SSDT) version.
3. The Chairmanship of the LSC is to be as follows:
  - 3.1 At inauguration, the function designated TTLSM with support and input from the Contractor's ILS Mgr.
  - 3.2 Following declaration of LSD, Chairmanship continues to be with the Technical Through Life Support Manager (TTLSM). This is the acceptance of the logistic pillar criteria being met to the satisfaction of the DLoD owner. The LSC will then be known as the In-Service LSC (ISLSC) and will ideally be held on a quarterly basis, or tailored to reflect the behaviour and trends of MSTAR, noting that the minimum number of reviews required per calendar year is two.
4. The membership of the LSC shall include, Authority representation:
  - 4.1 Technical Through Life Support (TTLS) Manager – Chair
  - 4.2 Project Manager (PM) / Operations Manager (OM)
  - 4.3 Engineering Manager
  - 4.4 Supply Chain Manager (SCM)
  - 4.5 Commercial Manager
5. Contractor representation. The Contractor shall have person(s) in attendance able to provide the technical and supply support issues of MSTAR ORP, these being:
  - 5.1 ILS Manager

- 5.2 Project Manager
- 5.3 Commercial
- 5.4 Engineering Support
- 5.5 Secretary

**FMECA – WORKSHEET INFORMATION****Purpose**

1. The purpose of the FMECA maintainability information analysis is to provide early criteria for maintenance planning analysis (MPA), support analysis (SA), test planning, inspection and checkout requirements, and to identify maintainability design features requiring corrective action.

**FMECA – Maintainability information worksheet**

2. Documentation of the maintainability information is accomplished by completing the approved FMECA – maintainability information worksheet. An example of a FMECA – maintainability worksheet format is shown below. Completed worksheets shall be included in the FMECA report.

**Worksheet Definitions:**

3. **Identification number:** A serial number or other reference designation identification number assigned for traceability purposes is to be entered on the worksheet. This is used to provide consistent identification of system functions and equipment and provide complete visibility of each failure mode and its relationship to the system function.
4. **Item/functional identification:** The name or nomenclature of the item or system function being analysed for failure mode and effects is listed. Schematic diagram symbols or drawing numbers shall be used to properly identify the item or function.
5. **Function:** A concise statement of the function performed by the equipment shall be listed. This shall include both the inherent function of the part and its relationship to interfacing items.
6. **Local effects:** Local effects concentrate specifically on the impact an assumed failure mode has on the operation and function of the item in the indenture level under consideration. The consequences of each postulated failure affecting the item shall be described along with any second-order effects which result. The purpose of defining local effects is to provide a basis for evaluating compensating provisions and for recommending corrective actions. It is possible for "local" effect to be the failure mode itself.
7. **Next higher level:** Next higher level effects concentrate on the impact an assumed failure has on the operation and function of the items in the next higher indenture level above the indenture level under consideration. The consequences of each postulated failure affecting the next higher indenture level shall be described.
8. **End effects:** End effects evaluate and define the total effect an assumed failure has on the operation, function, or status of the uppermost system. The end effect described may be the result of a double failure. For example, failure of a safety device may result in a catastrophic end effect only in the event that both the prime function goes beyond limit for which the safety device is set and the safety device fails. Those end effects resulting from a double failure shall be indicated on the FMECA worksheets.



9. **Severity classification:** Severity classifications are assigned to provide a qualitative measure of the worst potential consequences resulting from design error or item failure. A severity classification shall be assigned to each identified failure mode and each item analysed in accordance with the loss statements below. Where it may not be possible to identify an item or a failure mode according to the loss statements in the four categories below, similar loss statements based upon loss of system inputs or outputs shall be developed and included in the FMECA ground rules subject to approval from the authority.
  - 9.1 **Category I – Catastrophic:** A failure which may cause death or system loss
  - 9.2 **Category II – Critical:** A failure which may cause severe injury, major property damage, or major system damage which will result in mission loss
  - 9.3 **Category III – Marginal:** A failure which may cause minor injury, minor property damage, or minor system damage which will result in delay or loss of availability or mission degradation
  - 9.4 **Category IV – Minor:** A failure not serious enough to cause injury, property damage or system damage, but which will result in unscheduled maintenance or repair
10. **Failure predictability:** Enter information on known incipient failure indicators (e.g., operational performance variations) which are peculiar to the item failure trends and permit predicting failures in advance. When a failure is predictable in advance, describe the data that must be collected, how it will be used to predict failure, and identify any tests or inspections that may be accomplished to detect evidence of conditions which could cause the failure mode.
11. **Failure detection means:** Identify how each failure mode will be detected by the organisational level maintenance technician and to what indenture level they will be localised. Describe the method by which ambiguities are resolved when more than one failure mode causes the same failure indication. Describe any monitoring or warning device that will provide an indication of impending failure and any planned tests or inspections which could detect occurrence of the failure mode. Identify to what indenture level failures can be isolated by the use of built-in-test features and indicate when ancillary test equipment will be required for fault isolation.
12. **Basic maintenance actions:** Describe the basic actions which, in the analyst's judgement, must be taken by the maintenance technician to correct the failure. Identify the special design provisions for modular replacement and the probable adjustment and calibration requirements following repair.
13. **Remarks:** Any pertinent remarks pertaining to and clarifying any other columns shall be noted. Notes regarding recommendations for design improvement shall be recorded and further amplified in the FMECA report.

FAILURE MODE EFFECTS AND CRITICALITY ANALYSIS  
MAINTAINABILITY INFORMATION

SYSTEM: \_\_\_\_\_  
INDENTURE LEVEL: \_\_\_\_\_  
REFERENCE DRAWING: \_\_\_\_\_  
MISSION: \_\_\_\_\_

DATE: \_\_\_\_\_  
SHEET: \_\_\_\_\_ OF \_\_\_\_\_  
COMPLIED BY: \_\_\_\_\_  
APPROVED BY: \_\_\_\_\_

IDENTIFICATION NUMBER	ITEM/FUNCTIONAL IDENTIFICATION (NONENCLATURE)	FUNCTION	FAILURE EFFECTS			SEVERITY CLASS	FAILURE PREDICTABILITY	FAILURE DETECTION MEANS	BASIC MAINTENANCE ACTIONS	REMARKS
			LOCAL EFFECT	NEXT HIGHER EFFECT	END EFFECT					

**NON-ECONOMIC (NE) LEVEL OF REPAIR ANALYSIS (LORA) REPORT TEMPLATE**

1. The Information that is to be specified in the NE-LoRA Analysis Worksheet shall be by at least the System LCN EBS Level and by each MSI LRU that is separately being analysed

Non-Economic Factor	Yes	No	Maintenance Level Affected or Restricted	Reason for Restriction
<b>Safety:</b> Do hazardous conditions exist which prohibit the item from being repaired at any specified maintenance level?  Conditions to be considered include, but are not limited to:  High Voltage Radiation Temperature Extremes Chemicals or Toxic Gases Excessive Noise Explosives Excessive weight Other:				
<b>Security:</b> Do security conditions exist which prohibit the item from being repaired at a specific maintenance level?				

Non-Economic Factor	Yes	No	Maintenance Level Affected or Restricted	Reason for Restriction
<b>Policies/existing maintenance concepts:</b> Are there specifications, standards or regulations pertaining to the level of maintenance at which a particular item can or cannot be repaired? This includes existing maintenance concepts or policies on similar systems to be used as a baseline for comparison.				
<b>Warranties:</b> <b>A.</b> Are there warranties on any items in the LORA candidate list which restrict the maintenance level for repair? <b>B.</b> Does warranty eliminate organic support of an item?				
<b>Readiness/Mission success:</b> Will mission readiness be compromised if any item is repaired or discarded at a specific maintenance level?				

Non-Economic Factor	Yes	No	Maintenance Level Affected or Restricted	Reason for Restriction
<b>Transportation/Transportability:</b> Are there any transportation factors which might prohibit the transfer of systems from the user to the maintenance activity for repair? The factors include: Weight Size Volume Special Handling Requirements Susceptibility to Damage Other:				
<b>Support &amp; to Test Equipment (S&amp;TE), including support items for the Complete Equipment Schedule (CES):</b> <b>A.</b> Are special tools/ Test equipment required which would force repair to be performed at a specific level of maintenance <b>B.</b> Does the item require calibration which mandates performance of maintenance at a certain level(s) due to system sensitivity or lack of calibration equipment at a level?				

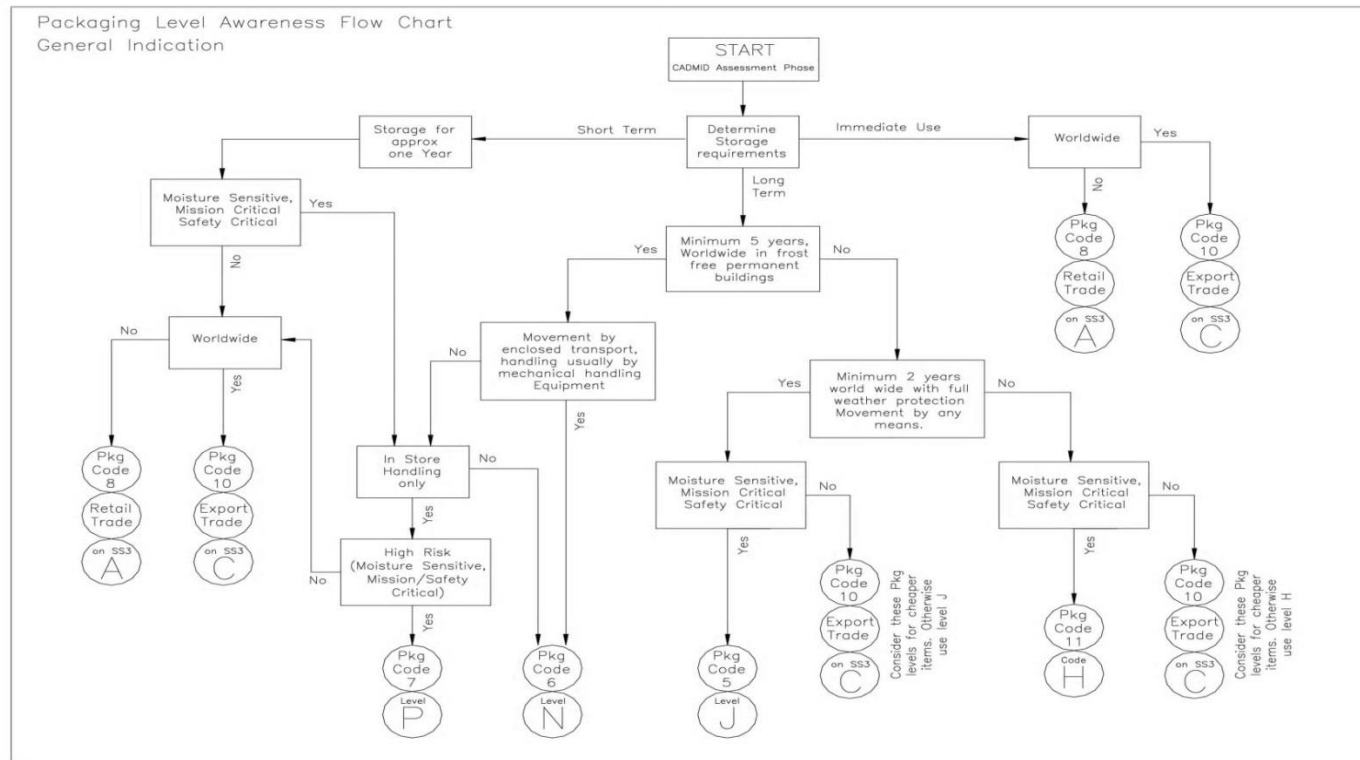
Non-Economic Factor	Yes	No	Maintenance Level Affected or Restricted	Reason for Restriction
<b>Package, Handling and Storage:</b>  <b>A.</b> Does the items size, weight or volume, impose restrictions on storage? This may restrict the level where items/parts can be stocked. This would include storage of STTE or CES.  <b>B.</b> Are there any special PH&S requirements (i.e. packaging of computer hardware/software, hazardous materials, fragile material, climate control and packaging of materials susceptible of damage during transportation).				
<b>Manpower and Resource:</b>  <b>A.</b> Is there an adequate number of skilled personnel available to perform repair at a specified maintenance level?  <b>B.</b> Would repair or discard at a level create a problem on the existing workload?				
<b>Facilities:</b> <b>A.</b> Special unique facility requirements: Clean Rooms Size of Test Equipment Climate Control Corrosion Control Forging/Casting/Stamping Sophisticated Calibration Equipment				

## OFFICIAL

Non-Economic Factor	Yes	No	Maintenance Level Affected or Restricted	Reason for Restriction
Nuclear Hardness Requirements  <b>B.</b> Special Procedures for Repair-hermetically sealed units Excessive Repair Times Magnetic Particle Inspection X-ray Inspection Testing Procedures: Vibration /Shock Analysis Wind Tunnel Testing  Alignment Procedures				
<b>Other Factors (if applicable):</b>				

**Packaging, Handling, Storage and Transportation (PHS&T)**

- 1 The packaging guidance flow chart shown at Figure 6 is to aid the Contractor in their determination and review of Items of Supply packaging and labelling levels. All proposed levels shall be subject to validation by the Authority to ensure they are appropriate for the MSTAR ORP System. Compliance to this guidance will ensure all items entering the Joint Support Chain (JSC) are packaged and labelled to a consistent standard. This will ensure Items of Supply arrive at the right place, at the right time in the right condition, with due regard to economy and can be accurately recorded on Authority Consignment Tracking Systems.

**Figure 6 – Packaging Level Guidance****Selecting the optimum packaging level**



**THROUGH LIFE DATA RECORDING, ANALYSIS and CORRECTIVE ACTION SYSTEM (DRACAS)****INTRODUCTION**

1. Data Recording, Analysis and Corrective Action System (DRACAS) shall be employed during the Manufacture phase of MSTAR ORP and also for In-Service, through to Disposal of MSTAR.
2. The main purpose of DRACAS is to assist in the design upkeep and update of MSTAR ORP and, therefore, any improvements to be considered for implementation are based on the optimal engineering and functional performance and cost parameters. DRACAS also provides:
  - 2.1 Reliability Performance Monitoring.
  - 2.2 Trend Analysis.
  - 2.3 Evidence for Incident Investigations and analysis to aid corrective action decisions.
  - 2.4 Evidence for Sentencing Panels in making sentencing decisions.
  - 2.5 Documentary evidence of proof of close out of the incident and/or sentence is completed.
  - 2.6 Evidence for Implementing Change/Updates as part of Post Design Services (PDS)

**INCIDENT CLASSIFICATION/CODES**

3. The first stage will be the Sentencing of failures as to their Incident Classification/Code. These being Attributable or Non-Attributable.
  - 3.1. Attributable Failures refer to:
    - 3.1.1. Normal Wear and Tear
    - 3.1.2. Design Specification issues, failure or fault
    - 3.1.3. Manufacturing Defect
    - 3.1.4. AESP, Technical Documentation Defects and/or omissions by the Contractor
    - 3.1.5. Software failures
    - 3.1.6. All sentenced Attributable failures are in-scope of the contractual Supply Support Repair agreement.
  - 3.2. Non-Attributable Failures refer to Human Intervention (HI) failures:
    - 3.2.1. Battle Damage, external explosion, impact and/or damage through contact on operations and/or on training by friendly or enemy forces.
    - 3.2.2. Misuse (or accident), negligence, accidental damage or storage or use of the equipment outside of its intended environment or specification limits unless agreed with the contractor in advance. Additionally this includes damage through Natural Disasters.
    - 3.2.3. AESP, Technical Documentation Defects and/or omissions by the Authority.
  - 3.3. No Fault Found (NFF) failures can be both Attributable and Non-Attributable. The decision as to whether the NFF is Non-Attributable, shall be incumbent on the Contractor to provide evidence that the User failed to comply with laid down instructions/procedures. NFF failures will be assumed to be Attributable unless evidence contradicts otherwise.
  - 3.4. All failures through life will be subject to Sentencing and must be reached in agreement with the Authority. Sentencing will also be used to facilitate the Authority in recovering associated repair/inspection costs for equipment/function failures sentenced as Attributable.

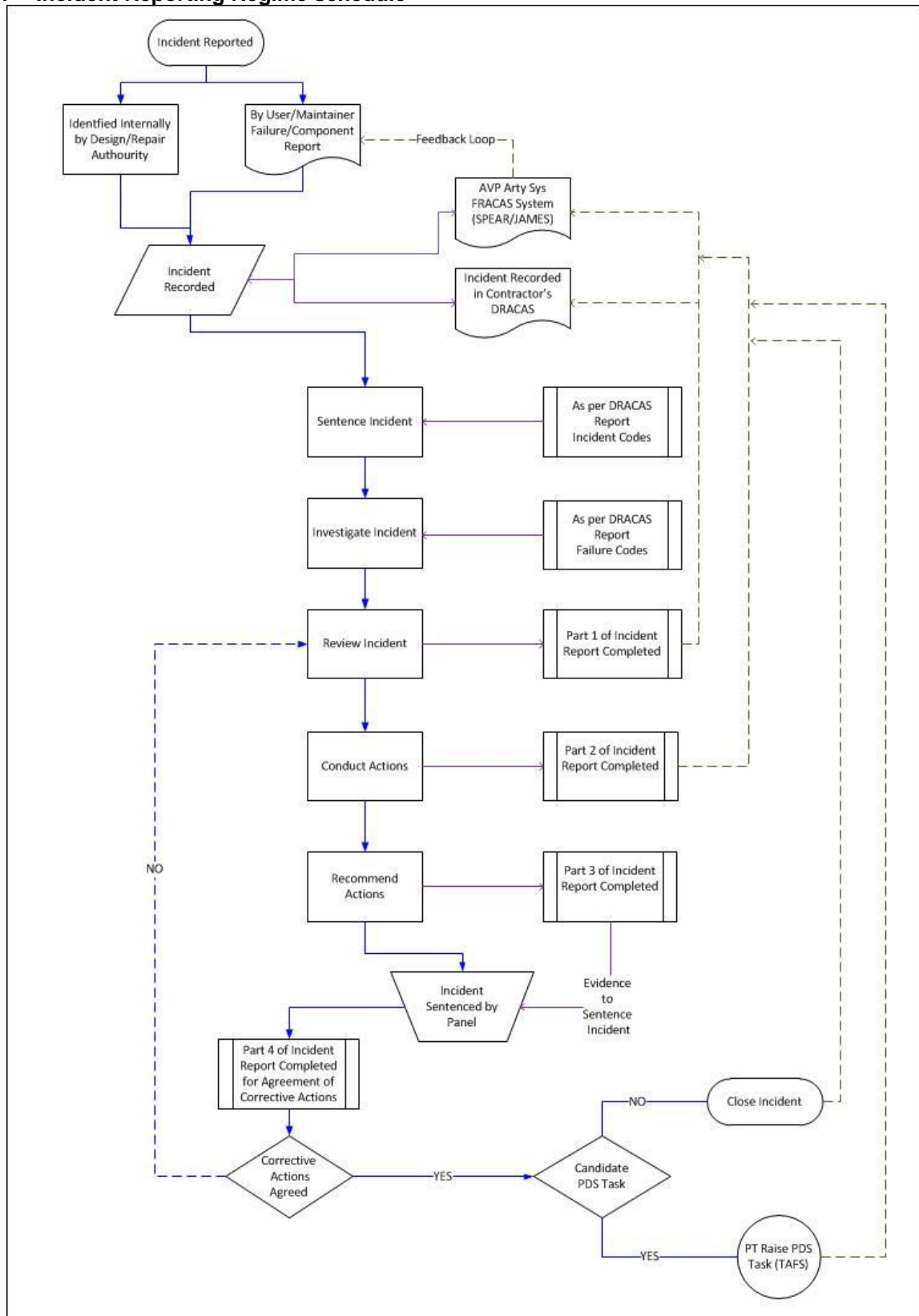
#### **INCIDENT FAILURE CODES**

4. The second stage will be the Sentencing of the cause of failures and their severity by identifying the reason why the failure occurred to identify an agreed resolution action, Refer to Definitions at Appendix 1 to the Statement of Requirement for severity of types of failures that can be used. Causes of Failure to be recorded are:
  - 4.1 Design
  - 4.2 Quality
  - 4.3 Procedure
  - 4.4 Documentation
  - 4.5 Human error
  - 4.6 Secondary Failure
  - 4.7 Foreign Object
  - 4.8 Maintenance Induced
  - 4.9 Software Development
  - 4.10 Pre-Life failure
  - 4.11 Post-Life failure
  - 4.12 More Information required for Investigation
  - 4.13 Unresolved

### INCIDENT REPORTING DRACAS PROCESS

5. The Incident Reporting process is shown below and is to be documented in the AESP Cat 111 (ESPD):

Figure 7 – Incident Reporting Regime schedule



**‘DATA RECORDING’**

6. The Contractor shall record all incidents and observations reported by the User and identified by the Contractor and their sub-contractors, using the Logistic Information Repository (LIR). All DRACAS information contained in the LIR shall be in the format, structure and content as agreed in the Data Module Requirement (DMRL).

**‘ANALYSIS’ - INCIDENT INVESTIGATION**

7. The Contractor shall propose resolutions to recorded incidents and/or observations through use of R&M tools FMECA and FTA to ensure all effects of the fault are identified. The ILS processes; Support Analysis (SA) and Software Support Analysis (SSA) shall also be used, in cases of the ‘Corrective Action’ identifies a potential Update for immediate and/or future implementation.

**‘CORRECTIVE ACTIONS’ - DATA REPORTING OF PROPOSED RESOLUTION**

8. The Contractor shall Report to the Authority all proposed resolutions to incident and/or observations by:
  - 8.1 Level 4 Feedback on User’s Incident Report on nature of fault, classification and proposed resolutions.
  - 8.2 Update of the LIR with the Data Recording and Analysis (DRA) elements of DRACAS including the Incident Classification and Severity of Failure and proposed and/or Immediate Resolutions, including:
    - 8.2.1. Equipment Usage and Equipment Usage since Last Failure, including the Line Replacement Unit (LRU) Usage where applicable.
    - 8.2.2. R&M performance characteristics (MTBF) to reflect Equipment and LRU Usage. This shall also include the Failure Analysis, possible causes and modes of failure.
    - 8.2.3. Failure Effects Analysis by Component, SRU, LRU, Local Equipment, Sub-System, System, Platform and Interoperability with other Systems.
    - 8.2.4. Immediate Resolution and Recommended Contractor Repair proposal Identified at Inspection of Failed Equipment/Item/Function including Components/Functions Identified as Faulty.
  - 8.3 Update of the LIR with the following information Corrective Action System (CAS) elements of DRACAS based on the progress of incident information to provide a ‘closed loop’ including:
    - 8.3.1 Analysis of incidents and their causes (FMECA and FTA) by the Contractor to provide Corrective Actions (CA) and Updates where necessary;
    - 8.3.2 R&M estimates in performance parameters if there is a potential for an Update.
    - 8.3.3 Supporting Evidence for implementing CAS. This will include the Contractor’s SA, SSA and associated Reports to justify and or support the recommended mitigation and implementation. This can be local and/or fleet wide Update, noting all issues of effects on interoperability and associated systems must be included.
    - 8.3.4 Planning estimates and Update Programmes.
    - 8.3.5 Actual dates when embodied of CA and Update.
    - 8.3.6 Date Loop Closed containing the evidence and agreement details.

**INCIDENT SENTENCING PANEL****TERMS OF REFERENCE (ToRs)**

1. The Incident Sentencing Panel will be operated using the following ToRs. The Incident Sentencing Panel will be convened for:
  - 1.1 Review of Incident data.
  - 1.2 Determination of the root cause of the Incident. Perform further investigations where there is a potential of secondary and/or interoperability AR&M issue.
  - 1.3 Assessment and review of any recommended immediate resolution and corrective actions to restore functionality to the failed equipment/function.
  - 1.4 Determination and verification of any proposed change in the design, operation, training and/or maintenance of the equipment and function.
  - 1.5 Determination of sentencing classification of all AR&M incidents and function related observations.
  - 1.6 Maintenance of an auditable trail for each sentencing and incident decision made (meeting minutes, evidence presented, rationale for decisions and resultant actions) which are included as part of the LIR.
  - 1.7 Be responsible to and report findings to other key Governance Areas, LSC, Risk, Security, Safety and Environmental.
2. The Contractor's ILS/AR&M representative shall be responsible for the minutes of the meeting. This ensures committee members will have full access to the technical information and rationale behind all proposed immediate resolutions, their implications and any subsequent remedial actions requiring agreement.
3. Once incidents have been formally sentenced, the sentence can only be changed by the Incident Sentencing Panel, ECCB and/or the LSC. All Incidents, observations that have been sentenced and agreed are submitted to the LSC, appropriate Governance area for ratification.
4. Formal voting is not to be used in Incident Sentencing. Where a consensus cannot be reached then sentencing may be deferred if further investigation is required. If a consensus cannot be reached then the incident should be sentenced by the Chairman. Where significant areas of disagreement exist the conflict resolution chain will be; Incident Sentencing Panel Chairman → LSC → Contract Resolution Process.
5. The Incident Sentencing Panel meetings should be an open forum for discussion of all issues relating to the incidents and observations being sentenced, and should invite contributions from all members.
6. Incident Sentencing Panel meetings will be held in conjunction with the In-Service LSC meetings, ideally on a quarterly basis, or tailored to reflect the behaviour and trends of MSTAR, noting that the minimum number of reviews required per calendar year is two.

1. The Fielding Plan is used to manage the delivery of MSTAR ORP Systems.

11

[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

