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Situational Awareness Command & Control DT

Maritime Multi Link

Statement of Work for Provision of Maritime Multi-Link TDL SME / I- SMART / ITEAP Technical Support

Annex A to FATS D&E Tasking Order Form
FTS/DE/SACC/12

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AUTHORISATION

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AMENDMENT HISTORY

Issue No.	Details of Amendment	Amended By	Date
0.1	Initiation (First Draft)	SACC ABM PM1a	18/11/2016
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List of Abbreviations

Abbreviation	Description
CIWG	Capability Integration Working Group
CSIC	Command System Integration Committee
DLCP	Data Link Control Panel
DLP	Data Link Processor
FOC	Full Operational Capability
IOC	Initial Operational Capability
ISD	In-Service Date
JRE	Joint Range Extension
L16	Link 16
LPD	Landing Platform Dock
PMO	Programme Management Office
QEC	Queen Elizabeth Carrier
SACC DT	Situation Assessment Command and Control Delivery Team
SML22	Surface Maritime Link 22
SoW	Statement of Work
T23	Type 23
T26	Type 26
T45	Type 45
TDL	Tactical Data Link

BACKGROUND

1. The Maritime Multi Link (MML) Programme will deliver a significant uplift in capability to the data link systems on Royal Navy (RN) vessels. This will be delivered through two interdependent Projects namely Phase 1, consisting of 'Link 16 Development' and Phase 2 which will deliver a multi-link capability..
2. Phase 1 'Link 16 Development' will treat current operational interoperability issues by upgrading Link 16 on T45 to STANAG 5516 Edition 6 , while Phase 2 will introduce Link 22 and Satellite Tactical Data Link (Enhanced) (STDLE) to achieve interoperability and beyond line of sight (BLOS) capability on targeted platforms. A minimal upgrade will be delivered to Link 11 in order maintain harmonisation in the message catalogue between the respective data links. Link 22 and Link 11 will run concurrently until the link 11 out-of-service date, at which point Link 22 will become the primary BLOS data link.
3. Phase 1 Link 16 Development is managed by DES Ships MCS under WSpt commercial arrangements with T45 COM and it is currently in the demonstration and manufacturing stages. While Phase 2 is managed by SACC DT and currently in its assessment stage.
4. SACC DT is currently working with key stakeholders to establish a programme of work to take account of the data link needs of various platforms. The surface ship platforms planned to receive the RN Multi-Link Capability are the T45, QEC, T23, and LPD; in addition to these platforms, the MML programme will deliver a core MML software drop to Type 26 no later than Q4 2020.
5. MML is a Cat C Medium-Long term programme, managed and delivered by DES SACC DT in collaboration with DES Ships MCS, T45 COM, the Main Contractor and other Sub-Contractors. The Project is sponsored by the Joint Forces Command as part of the NILE programme.
6. The MML Project requires precise technical knowledge about integral parts of the Tactical Data Link (TDL) systems used in the maritime arena, line of sight (LOS) and beyond line of sight (BLOS). This knowledge is provided by user expertise via Navy Command (NC), MoD technical authorities as in JDLMO, Portsmouth Technology Park (PTP) and the contracted expertise of a TDL System Engineer.
7. The TDL System Engineer is viewed as an essential appointment necessary to reduce MOD risk in implementing modern complex Tactical Data Link Systems. This expertise can be supplied by only a few specialists in the world. In addition to having exceptional experience in the design specification and implementation of RN Data Link Systems over recent years, the expert should be experienced in Combat System integration, which is identified as another major risk area for the project.
8. The forthcoming demands on this expertise are to:
 - a. Provide assistance in achieving Main Gate (2017),
 - b. Aid in setting and monitoring progress in the programme,
 - c. Provide essential detailed technical support in contract negotiations.
9. The MML Project also requires in-depth technical knowledge of the E-SMART Tool and I-SMART process which is not available from existing SACC DT resources.
10. This role is viewed as an essential appointment necessary to ensure that the Interoperability Exchange Requirements (IER) for each Datalink are captured and

articulated. That the Interoperability Matrix (IOM), Platform Requirements Specification (PRS) and associated documents are delivered to reduce MOD risk in implementing modern complex Tactical Data Link Systems.

SCOPE: WORK PACKAGES

11. The Contractor shall require detailed knowledge of TDL Systems & Standards including:
 - a. Link 22 (STANAG 5522 edition 5)
 - b. Link 16 (STANAG 5516 all editions)
 - c. Link 11 (STANAG 5511 all editions)
 - d. Data forwarding between Tactical Data Links (STANAG 5616 all editions)
 - e. Joint Range Extension Application Protocol (STANAG5518 editions 3 & 4)
 - f. Technical Characteristics MIDS (STANAG 4175 all editions)
 - g. All associated NATO ATDLP documents with the above TDL Standards
 - h. Awareness and understanding of the currently open NATO STANAG DLCPs applicable to the MML message implementation and project scope
 - i. Awareness and understanding of DEF STAN 2188
 - j. Knowledge and experience of the full ITEA Process including the use of VVRM

12. The effort required under this contract is estimated at 11 months. This should take the contract up to the end of November 2017 in line with Main Gate approval; however, there may be a requirement to extend by a few months if Main Gate is delayed.

WORK PACKAGE 1

FOR MML TDL SME SUPPORT

Note: Reports shall be **Soft / Electronic / Printable / Auditable** using any (where specified) or a combination (as appropriate) of **MS Word, PDF, MS Power-Point or Excel** formats.

Item	TASK Description	DELIVERABLE	Duration/Target Date
A	Provide Subject Matter Expert support to DES SACC DL-PM2 on all technical aspects of the MML programme to achieve main gate approval. This expertise shall cover all aspects of Link 11, Link 16, Link 22, JRE and STDL tactical data links within the Royal Navy and platform combat systems.	Attendance at meetings with industry and Navy Command. Review/prepare documentation and provide technical reports, working papers and technical direction to the MML programme and DES SACC DL-PM2 to assist in achieving Main Gate Approval.	Contract duration.
B	Provide direction to the Authority with clarification on technical issues that concern the MML programme and the baseline requirement. Where necessary, gain direction from Navy Command where the questions raised concern operational issues.	Provide a monthly report (electronic) to DES SACC DL-PM2 on technical progress. Formal responses to questions to be provided within two weeks of receipt using the most appropriate and auditable means as agreed DES SACC DL-PM2 Formally update and distribute the Engineering Log every two months.	Report to be provided monthly. Formal responses to questions to be provided within two weeks of receipt. Engineering Log to be formally updated and distributed every two months.
C	Review Data Link Change Proposals instigated by NATO for impact on the MML baseline. Attend Data Link Change Proposal (DLCP) Configuration Control Boards which are held every four months.	Provide a report to DES SACC DL-PM2 on proposed changes and potential impact on the baseline requirement one week prior to the next DLCP CCB. Attend DLCP Configuration Control Boards which are held every four months.	Report to DES SACC DL-PM2 to be provided one week prior to the next DLCP CCB. Attend DLCP Configuration Control Boards every four months (these will be held in the South West).

D	<p>Review documentation and problem reports emanating from the NILE PMO and C&IWG meeting for impact on the MML programme.</p> <p>Attend CIWG meeting in support of the national representatives as and when required.</p>	<p>Provide a monthly report to DES SACC DL-PM2 describing activities arising from the NILE PMO.</p> <p>Attend C&IWG meeting as and when required.</p>	<p>Report to DES SACC-DL-PM2 to be provided monthly.</p> <p>CIWG meetings are held twice a year (contractor will not be required to attend these meetings if they are held outside of Europe).</p>
E	<p>Following Bid Return, update the Configuration Management plan to record and prioritise recorded problem reports in preparation for formal sentencing.</p>	<p>Continue delivery of the existing MML Configuration Management Plan for the provision of a SACC Configuration Management database and reporting system.</p>	<p>Plan to be delivered to DES SACC-DL-PM2 by the 30th April 2017.</p>
F	<p>Maintain the configuration status of all MML baseline documents using formal change control procedures.</p>	<p>Provide a monthly report on items where the baseline documents require modification.</p>	<p>Report to be provided monthly.</p> <p>Maintain configuration status of all MML baseline documents for the duration of the contract.</p>
G	<p>Following Bid Return, review comments from BAES re: development of a JRE satellite connectivity migration plan for the integration of JRE within UK Networks.</p>	<p>Update the migration plan for assurance with the Network Technical Authority.</p>	<p>Final plan to be delivered by 31st May 2017.</p>
H	<p>In collaboration with Phase 1 Technical SME, update and review the baseline migration plan for the transfer of Type 45 Link 16 Development capabilities into the Phase 2 activities.</p>	<p>Develop a migration plan for the transfer of the Type 45 Link 16 and extant issues, into the MML Phases 2 delivery plan and base-lined accordingly.</p>	<p>Plan to be delivered by June 2017.</p>
I	<p>Provide support to DES-SACC-DL-SE to facilitate a transfer of SME technical knowledge in support on the MML programme.</p>	<p>Provide and implement a Continuing Professional Development (CPD) Training Pack and materials to facilitate current, and future SACC DT staff reaching a state where they can operate as Tactical Data Link experts. The</p>	<p>Formal CPD plan to be provided within 4 weeks of contract award.</p>

		plan will be subjected to DES SACC-DL-SE approval.	
J	Contribute to the review of the formal bid return by contractor for T45 Command System Impact Assessment for the introduction of an integrated TDL Link 22 (+ L16, JRE(C), Link 11) solution by producing all technical aspects of the document.	Review of technical aspects of the contractor bid return.	Deliver Technical Clarification questions and Technical Guidance in response to the contractor bid return.
K	Attend CSIC Meetings Quarterly and CSIC Surgeries monthly (as required). Provide written and verbal reports and responses to technical questions raised at these meetings.	Attendance at meetings and written and verbal reports.	Attend CSIC meetings quarterly (meetings will be held somewhere in the South West). Attend CSIC surgeries as required (they are held monthly, but contractor's attendance may not be required every month – they will be held somewhere in the South West). Written and verbal reports to be provided to DES SACC-DL-PM2 within two weeks of attending meetings.
L	Attendance and participation in progress and technical meetings held with contractor(s) (approx. monthly) in execution of Command Systems integration, SoW development and DLP solution studies. These meetings will be held in Bristol, Yeovil or New Malden.	Attend and participate in progress and technical meetings with contractor(s). Provide DES SACC-DL-PM2 with a Monthly Progress Report.	Monthly. Monthly.
M	Attendance and participation in progress and technical meetings held with contractor(s) (approx. monthly) in execution of Command Systems integration of Link 22 and DLP solution	Attend and participate in progress and technical meetings held with contractor(s). Maintain a record of technical decisions through the existing Engineering Log.	Attend and participate in meetings monthly. Maintain a record of technical decisions for the duration of the contract.

	implementation. These meetings will be held in Bristol, Yeovil or New Malden.	Formally update and reissue the Engineering Log every two months.	Formally update and reissue the Engineering Log every two months.
N	Attendance and participation in SACC DT Main Gate Business Case Working Groups (approx. monthly) addressing technical aspects in support of technical assurance (DLP, Command System Integration, Command System Integration Testing schedules). These meetings will be held in Bristol, Yeovil or New Malden.	Attend and participate in SACC DT Main Gate Business Case Working Groups.	Monthly (contractor may not be required to attend every meeting).
O	Collate Link 22 Problem reports from Industry and stakeholders as they arise, compare with known issues and resolutions and correspond with the NILE Programme Management Office (PMO) for resolution during the assessment phase. Receive, record and disseminate NILE PMO responses to SACC DT.	Collate Link 22 Problem reports as they arise, and record and disseminate NILE PMO responses to SACC DT. Maintain a record of technical issues and formal technical direction provided through the existing Engineering Log. Formally update and reissue the Engineering Log every two months.	Contract duration. Contract duration. Formally update and reissue the Engineering Log every two months.
P	Contribute towards MML Main Gate Business Case by delivering technical aspects of the document.	Contribute to technical aspects of the MML Main Gate Business Case	Supply draft technical aspects of the MML MGBC by 31 st of July 2017
Q	Contribute to establishment and confirmation of L22 IOC / ISD / FOC requirements documentation for T23/T45/QEC/T26 platforms by producing and reviewing all technical aspects of the documentation.	Establish and confirm L22 IOC / ISD / FOC requirements documentation for T23/T45/QEC/T26 platforms. Maintain the configuration of the MML baseline documents, reporting their formal status every	Final documentation required by 30th June 2017. Maintain configuration for duration of contract. Report formal status of documents every two

		two months.	months.
R	Critically appraise contractor's costed technical options proposal for post MG work for integration of Link 22 (+ L16, JRE(C), Link 11) in LPD Command System.	Review contractor's system design documents and provide DES SACC-DL-PM2 with formal comments within two weeks of receipt of documentation.	Review documentation and provide formal comments within 2 weeks of receipt
S	Critically appraise contractor's costed technical options proposal for post MG work for integration of Link 22 (+ L16, JRE(C), Link 11) in T26 Command System.	Review contractor's system design documents and provide DES SACC-DL-PM2 with formal comments within two weeks of receipt of documentation.	Review documentation and provide formal comments within 2 weeks of receipt
T	Critically appraise contractor's costed technical options proposal for post MG work for integration of Link 22 (+ L16, JRE(C), Link 11) in QEC Command System.	Review contractor's system design documents and provide DES SACC-DL-PM2 with formal comments within two weeks of receipt of documentation.	Review documentation and provide formal comments within 2 weeks of receipt
U	Critically appraise contractor's costed technical options proposal for post MG work for integration of Link 22 (+ L16, JRE(C), Link 11) in T45 Command System.	Review contractor's system design documents and provide DES SACC-DL-PM2 with formal comments within two weeks of receipt of documentation.	Review documentation and provide formal comments within 2 weeks of receipt
V	Critically appraise contractor's costed technical options proposal for post MG work for integration of Link 22 (+ JRE(C), Link 11) in T23 Command System.	Review contractor's system design documents and provide DES SACC-DL-PM2 with formal comments within two weeks of receipt of documentation.	Review documentation and provide formal comments within 2 weeks of receipt
W	Critically appraise contractor's costed technical proposal for FOC work for T23, T45, Landing Platform Dock & QEC.	Review contractor's system design documents and provide DES SACC-DL-PM2 with formal comments within two weeks of receipt of documentation.	Review documentation and provide formal comments within 2 weeks of receipt
X	Critique and appraisal of bidder's technical response for development of SOW for T23 Command System Impact	Review the technical response and provide formal comments for review with DES SACC-DL-PM2 within two weeks of receipt.	Review the technical response and provide formal comments for review with DES SACC-DL-PM2 within two weeks of receipt

	Assessment for the introduction of an integrated TDL Link 22 (+ JRE(C), Link 11) solution.		
Y	Critique and appraisal of bidder's technical response for development of SOW for T45 Command System Impact Assessment for the introduction of an integrated TDL Link 22 (+ JRE(C), Link 11) solution.	Review the technical response and provide formal comments for review with DES SACC-DL-PM2 within two weeks of receipt.	Review the technical response and provide formal comments for review with DES SACC-DL-PM2 within two weeks of receipt
Z	Provide technical content portions of draft MML MGBC in support of SACC DT deliverables.	Produce technical documentation for MML MGBC.	Contribution/updates to MGBC required until Main Gate.
AA	Provide technical input for the development of the JRE(C) Unicast and Multicast satellite communications capability.	Liaise with DES SACC-DL-SE to assist in the provision of satellite communications capacity with Network Authority at Corsham. Provide a draft Internet Protocol (IP) migration plan to achieve satellite JREAP IP connectivity	By the 1 st of July 2017.
BB	Provide technical input to the development of a TDL upgrade path in the LPD DNA2 upgrade solution for the LPD and for the Navy Command Head Quarter second tranche requirement for MML in these platforms.	Provide technical input/documentation.	Contract duration.
CC	Provision of specialist technical input to the development in the enhancements of Type 23 combat system data exchange specification to support the introduction of SM Link 22 (+ L16, JRE(C), Link 11) into service and other enhancements in line with DEFSTAN 21-88 requirements. Liaise with combat	Provide technical advice/documentation. Develop a SACC DT plan to trial / demonstrate / validate and introduce into service. Conduct reviews and produce quarterly reports.	Contract duration. Contract duration. Conduct reviews and produce reports quarterly.

	systems' stakeholders and develop a SACC DT plan to trial / demonstrate / validate and introduce into service. Reviews to be conducted and quarterly reports provided to SACC DT.		
DD	Provision of technical reports to Contractor(s) and SACC DT to support the Acceptance process running up to Main Gate.	Reports to be produced within two weeks of request.	Reports to be delivered within two weeks of request.
EE	Provision of technical reports to SACC DT in the generation of selected DLP solution to ensure the correct STANAG level baselines are implemented for Link 16 / Link 22 (+ JRE(C) & Link 11).	Reports to be produced within two weeks of request.	Reports to be delivered within two weeks of request.
FF	Provision of technical reports to SACC DT on development of FOC SOW for T45, T23, LPD and QE classes.	Reports to be produced within two weeks of request.	Reports to be delivered within two weeks of request
GG	Provision of technical review to SACC DT regarding platform Data Link Processor (DLP) solution selection and associated Command System Integration and testing risks.	Reviews to be produced within two weeks of request..	Reviews to be delivered within two weeks of request
HH	Review and enhance, where necessary, the existing Multilink Technical Interface documents to provide the STANAG rules to support introduction of new TDLs or enhancements.	Draft reviews and updates (where necessary).	6 months from contract commencement, and 1 month prior to contract end date.
II	Provision of technical oversight of Link 22 (+JRE(C), Link 11) TDL chain integration with T45 Command System to assure interoperability in accordance with SACC	Provide technical oversight.	Contract duration.

	DT TDL Planning.		
JJ	Provision of technical oversight of Link 22 (+L16, JRE(C), Link 11) TDL chain integration with T23 Command System to assure interoperability in accordance with SACC DT TDL Planning.	Provide technical oversight.	Contract duration.
KK	Provision of technical oversight of Link 22 (+L16, JRE(C), Link 11) TDL system integration with platforms' respective communications system	Provide technical oversight.	Contract duration.
LL	Provision of technical oversight of Link 22 (+L16, JRE(C), Link 11) TDL system integration with platforms' respective Precise Time and Frequency Equipment (PTFE) systems.	Provide technical oversight.	Contract duration.
MM	Provision of Monthly Work In Progress Certificate (template supplied by SACC DT).	Confirm task progress and completion percentages against SoW / Project Schedule deliverables.	Contract duration.

WORK PACKAGE 2**FOR MML TDL I-SMART SUPPORT**

Note: Reports shall be **Soft / Electronic / Printable / Auditable** using any (where specified) or a combination (as appropriate) of **MS Word, PDF, MS Power-Point or Excel** formats.

Item	TASK Description	DELIVERABLE	Duration/Target Date
A	Provide Subject Matter Expert resource to DES SACC DL-PM2	Using the current MML MIP Version 2.3 Identify, clarify and articulate the Operational Requirements derived from the CONEMP against individual platforms.	Feb 2017.
B	Provide Subject Matter Expert resource to DES SACC DL-PM2	Establish, Produce and deliver the initial MML Interoperability Matrix (IOM) for the needs of ISS Des-Strat-TDLStds (output in, MS Word or MS Excel)	Feb 2017
C	Provide Subject Matter Expert resource to DES SACC DL-PM2	Fully populate the eSMART tool (or create an equivalent MS word document if eSMART content not yet available) with MML data for the following message standards: a. Link11, STANAG 5511 ed5 b. Link16, STANAG 5516 ed7 c. Link22, STANAG 5522 ed5 d. JRE (STDL(E), STANAG 5518 ed3 e. Data Forwarding, STANAG 5616 ed5 acknowledging the Data Link Change Proposals (DLCP) tabulated within the MML MIP Version 2.3	May 2017
D	Provide Subject Matter Expert resource to DES SACC DL-PM2	Produce and deliver the following outputs for each MML data link from eSMART: a. MML Platform Requirements Specification (PRS) – provides the exact message standard implementation requirements for the	June 2017

		<p>platform.) as eSMART files and MS Word (or MS Excel) documents</p> <p>b. Platform Requirements Difference Document (PRDD) to be included with the (PRS) specifying any deviations from STANAG Requirements for each individual Datalink (eg) Link 11, Link 16, Link 22, & JRE</p> <p>c. Review MIP Version 2.3 against the output from the I-SMART process to confirm validity</p>	
E	Provision of Monthly Work In Progress Certificate (template supplied by SACC DT).	Confirm task progress and completion percentages against SoW / Project Schedule deliverables.	Contract duration.

WORK PACKAGE 3**FOR MML TDL ITEAP SUPPORT**

Note: Reports shall be **Soft / Electronic / Printable / Auditable** using any (where specified) or a combination (as appropriate) of **DOORS, MS Word, PDF, MS Power-Point or Excel** formats.

Item	TASK Description	DELIVERABLE	Duration/Target Date
A	Provide Subject Matter Expert resource to DES SACC DL-PM2	Lead the MML ITEA Working Groups, providing expert technical experience to manage the ITEA test and acceptance process.	Contract duration.
B	Provide Subject Matter Expert resource to DES SACC DL-PM2	Provide technical expertise and deliver the MML verification and validation matrix to support Main Gate Business Case 2 deliverables.	October 2017
C	Provide Subject Matter Expert resource to DES SACC DL-PM2	Develop the baseline ITEA Plan, and deliver a fully endorsed document and plan to support MML Main Gate Business Case 2, set the conditions necessary to execute the ITEAP post Main Gate.	October 2017
D	Provision of Monthly Work In Progress Certificate (template supplied by SACC DT).	Confirm task progress and completion percentages against SoW / Project Schedule deliverables.	Contract duration.