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LETTER OF INTEREST
LETTRE D'INTÉRÊT

Title - Sujet
S1000D Technical Publication

Solicitation No. - N° de l'invitation	Date
W6369-200195/A	2020-02-11
Client Reference No. - N° de référence du client	**GETS Ref. No. - N° de réf. de SEAG**
W6369-200195	PW-$EEM-031-37355
File No. - N° de dossier	**CCC No./N° CCC - FMS No./N° VME**
031eem.W6369-200195	

Solicitation Closes - L'invitation prend fin
at - à 02:00 PM
on - le 2020-03-03

Time Zone
Fuseau horaire
Eastern Standard Time EST

F.O.B. - F.A.B.
Plant-Usine: ☐ **Destination:** ☐ **Other-Autre:** ☐

Address Enquiries to: - Adresser toutes questions à:	Buyer Id - Id de l'acheteur
Dossou, Hubert D.	031eem
Telephone No. - N° de téléphone	**FAX No. - N° de FAX**
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Issuing Office - Bureau de distribution
Mainframe & Business Software Procurement Division / Div des achats des ordi principaux et des logiciels de gestion
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Canada

REQUEST FOR INFORMATION REGARDING

S1000D TECHNICAL PUBLICATION MANAGEMENT SUITE
FOR
DEPARTMENT OF NATIONAL DEFENCE

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Annex A – Draft Statement of Requirements

Annex B – Questions to Industry

1) Background and Purpose of this Request for Information (RFI)

This RFI is being issued to satisfy the Department of National Defence/Canadian Armed Forces (DND/CAF) requirements for a commercially available S1000D compliant Technical Publication Management Suite comprising of an S1000D Common Source Database, S1000D Authoring, S1000D Publishing Engine, and S1000D Interactive Electronic Technical Publication (IETP) Viewer (hereby referred to as "The S1000D Software"). The S1000D Software is required by DND/CAF to manage publications associated to assembly illustrations, bills of material and related parts details specific to its equipment. The S1000D Software may also link assembly illustrations to the maintenance planning process in the Department of National Defence's Defence Resource Management Information System (DRMIS), which is based on SAP, allowing Users to select components from assembly illustrations, bills of material, and related parts details displayed in the S1000D Software and add them directly into SAP Maintenance/Service orders in DRMIS.

The main objectives of this RFI are as follows:

a) Provide industry with an early opportunity to assess and comment on the requirements in order to maximize best value to Canada if a request for proposal (RFP) is posted;

b) Determine the capability of suppliers to provide services described in the draft Statement of requirements (SOR);

c) Provide industry with an opportunity to recommend various approaches to conduct and evaluate a proof of performance;

d) Solicit feedback and recommendations on any issues that would impact a supplier's ability to fulfill the requirements;

e) Solicit feedback on the cost, schedule, level of effort, hardware requirements and technical architecture;

f) Solicit feedback on integrating the S1000D Technical Publication Management Software Suite with the existing SAP system;

g) Solicit industry knowledge and expertise with regard to best practices that would increase the likelihood of a successful outcome for this project and/or similar projects; and

h) Opportunity for industry to demonstrate and discuss its software capabilities.

2) Nature of Request for Information

This is not a bid solicitation. This RFI will not result in the award of any contract. As a result, potential suppliers of any goods or services described in this RFI should not reserve stock or facilities, nor allocate resources, as a result of any information contained in this RFI. Nor will this RFI result in the creation of any source list. Therefore, whether or not any potential supplier responds to this RFI will not preclude that supplier from participating in any future procurement. Also, the procurement of any of the goods and services described in this RFI will not necessarily follow this RFI. This RFI is simply intended to solicit feedback from industry with respect to the matters described in this RFI.

3) Nature and Format of Responses Requested

Respondents are requested to provide their comments, concerns and, where applicable, alternative recommendations regarding how the requirements or objectives described in this RFI could be satisfied. Respondents are also invited to provide comments regarding the content, format and/or organization of any draft documents included in this RFI. Respondents should explain any assumptions they make in their responses.

4) Response Costs

Canada will not reimburse any respondent for expenses incurred in responding to this RFI.

5) Treatment of Responses

a) **Use of Responses**: Responses will not be formally evaluated. However, the responses received may be used by Canada to develop or modify procurement strategies or any draft documents contained in this RFI. Canada will review all responses received by the RFI closing date. Canada may, in its discretion, review responses received after the RFI closing date.

b) **Review Team**: A review team composed of representatives of DND and PWGSC will review the responses. Canada reserves the right to hire any independent consultant, or use any Government resources that it considers necessary to review any response. Not all members of the review team will necessarily review all responses.

c) **Confidentiality**: Respondents should mark any portions of their response that they consider proprietary or confidential. Canada will handle the responses in accordance with the Access to Information Act.

d) **Follow-up Activity**: Canada may, in its discretion, contact any respondents to follow up with additional questions or for clarification of any aspect of a response.

6) Contents of this RFI

a) This RFI contains a draft Statement of Requirements (see Annex A – Draft Statement of Requirements). This document remains a work in progress and respondents should not assume that new clauses or requirements will not be added to any bid solicitation that is ultimately published by Canada. Nor should respondents assume that none of the clauses or requirements will be deleted or revised. Comments regarding any aspect of the draft document are welcome.

b) This RFI also contains specific questions addressed to the industry (see Annex B – Questions to Industry).

7) Volumetric Data

Any volumetric data included in this RFI is being provided to respondents purely for information purposes. Although it represents the best information currently available to PWGSC, Canada does not guarantee that the data is complete or free from error.

8) Long-Term/Continuous Planning

a) **Product Evolution Scope**: Canada expects the scope of the software solution to evolve during its use by the Department of National Defence.

b) **Solution Utilization timeframe**: The duration of any contract resulting from this procurement process does not indicate the period of the business relationship with the Contractor. DND will continue to use the software solution as long as it makes good business sense.

c) **Multi-departmental clause**: The RFP will also allow Canada to make the software solution available to any department or Crown corporation (as those terms are defined in the Financial Administration Act) or any other party for which the Department of Public Works and Government Services is authorized to act from time to time under section 16 of the Department of Public Works and Government Services Act (each a **"Client"**). Canada reserves the right to identify the software solution as a departmental or enterprise standard for this use and similar uses. Although Canada may make the software solution available to any or all the Clients, the bid solicitation does not preclude Canada from using another method of supply for entities of the Government of Canada with the same or similar needs.

9) Format of Responses

a) **Cover Page**: If the response includes multiple volumes, respondents are requested to indicate on the front cover page of each volume the title of the response, the solicitation number, the volume number and the full legal name of the respondent.

b) **Title Page**: The first page of each volume of the response, after the cover page, should be the title page, which should contain:

i) the title of the respondent's response and the volume number;

ii) the name and address of the respondent;

iii) the name, address and telephone number of the respondent's contact;

iv) the date; and

v) the RFI number.

c) **Numbering System**: Respondents are requested to prepare their response using a numbering system corresponding to the one in this RFI. All references to descriptive material, technical manuals and brochures included as part of the response should be referenced accordingly.

d) **Number of copies:** Respondents are requested to submit one softcopy of their responses, in PDF format.

e) **Submission of Responses:** Canada requests that respondents submit their responses by email to the Contracting Authority named below at the date and time indicated on the first page of the RFI. Each respondent should ensure that the company name, the RFI number and closing date appear in the email subject line.

10) Enquiries

Because this is not a bid solicitation, Canada will not necessarily respond to enquiries in writing or by circulating answers to all potential suppliers. However, respondents with questions regarding this RFI may direct their enquiries to:

Contracting Authority: Hubert Degbegni Dossou
E-mail Address: hubert.degbegnidossou@pwgsc.gc.ca
Telephone: 613-858-8173

Annex A

Statement of Requirements (SOR)

S1000D Technical Publication Management Suite

Department Of National Defence
Directorate Defence Resource Management Information System (DDRMIS)

Date: 28 October 2019
Version 1.0

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1.0 Overall Requirements

The Department of National Defence (DND) requires an S1000D compliant Technical Publication Management Suite comprising of an S1000D Common Source Database (CSDB), S1000D XML Authoring tool, S1000D Publishing tool, and S1000D Interactive Electronic Technical Publication (IETP) Viewer solution with the capability of authoring, managing and publishing the content of the S1000D CSDB, that permits users as viewers to search, identify, and select the correct parts for maintenance activities and add them to an SAP Maintenance/Service order in the Defence Resource Management Information System (DRMIS).

The S1000D Technical Publication Management Suite will replace a legacy application called Equipment Item File (EIF) Atlas (more widely referred to as MXCD) and the component of the Automated Land Scaling System (ALSS) which includes the legacy database where Army Equipment Support Lists (ESLs) are maintained. The legacy application is described in more detail in Appendix A – Legacy Application.

The contractor must supply a solution that supports DND with the following list of deliverables:

1.1 S1000D Technical Publication Management Software Suite Licensed Software;

1.2 Software Warranty;

1.3 Maintenance & Support Services and Continuous Improvement;

1.4 Adaptive Localization; including accessibility, language and user experience;

1.5 Documentation, Media and Optional On and Off-Premise Training, Knowledge Transfer & Content Management Services;

1.6 Optional Maintenance and Support Services and Continuous Improvement;

1.7 Optional Additions; increasing capacity and GC/Entity Wide;

1.8 Optional Extensions; On/Off-Premise Software Goods, Services, Utilities, Tools and/or Innovation; and

1.9 Optional Professional Services; Training and Resources.

2.0 Scope & Future Direction

Scope:

The scope of this procurement is to replace existing functionality used by the Army. Rollout to the Navy will be conditional on fulfillment of rated requirements related to the synchronization of data between central and deployed servers. Air Force requirements were not included in the scope of this procurement.

The S1000D Technical Publication Management Software suite must contain an S1000D compliant Common Source Database with content management and authoring functionality that is described in the statement of requirements. The software suite must also contain a Publication tools component that must be able to publish S1000D IETPs and Page Oriented publications using the S1000D CSDB and should also support publishing from other sources. An IETP Viewer application must also be included and should be browser based and include a software development kit (SDK) that will allow the customization of the presentation layer as well as customer specific integration points.

This project has 2 phases known as Phase 0.5 and Phase 1.0. Phase 0.5 is the procurement and installation of the S1000D Technical Publication Management software suite that has the capability of integrating with SAP. Phase 1.0 is the integration to SAP from within the Viewer and the CSDB.

The scope includes full S1000D compliancy, interfaces to deployed servers and mobile devices and the ability to accept and display 2D/3D illustrations.

Scope Exclusions:

The following items are **NOT** in Scope:

- The replacement or duplication of the SAP ERP software (DRMIS) as the Product Lifecycle Management (PLM) solution.
- Off-line maintenance management or order processing solution.
- Changes to the SAP product structure to accommodate the navigation throughout the publication.
- Enterprise Content Management system for unstructured data.

Future Direction:

The End state of the S1000D solution at DND may incorporate an Enterprise Content Management System where the fully rendered Publications may be stored and managed.

The scope also includes the potential future need for adaptive agile localization; i.e. continuous improvement, web schools and innovation lab/observatory; as additions and extensions to the solution. DND will monitor industry trends and practices and may further develop the solution, platform and infrastructure related to the programs, plans and priorities. Functions and capabilities that are future considerations; Support for Augmented Reality, Maintenance Automation, Automated French-English and English-French Translation Support, Natural Language Processing (NLP) Support, and 3D printing.

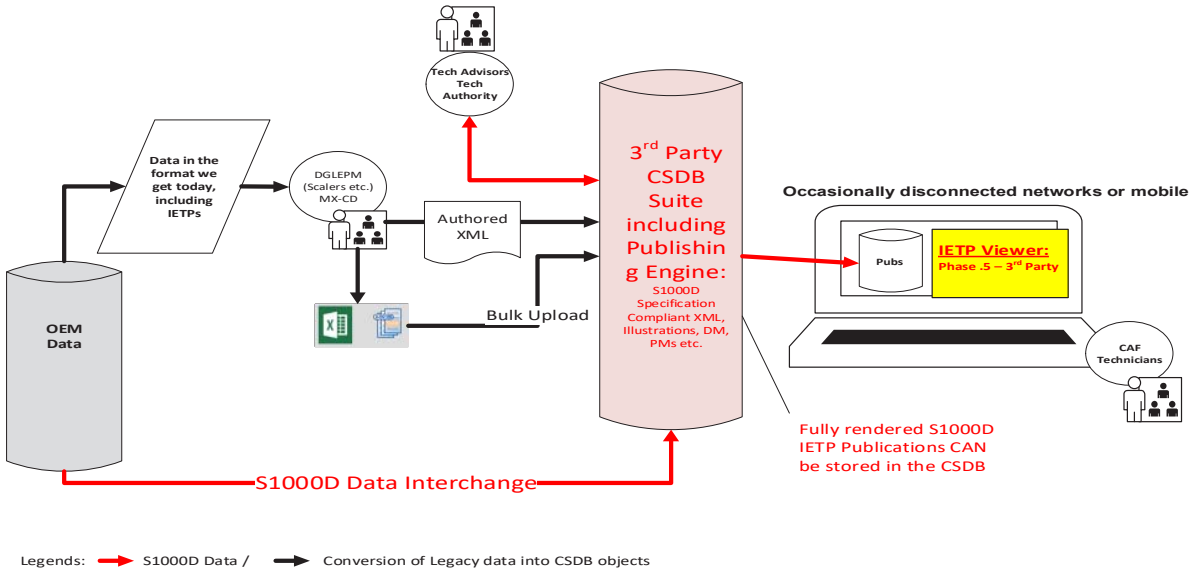
Although this requirement is based on S1000D, the software solution being proposed should include the capability to integrate to other S-Series

specification (S2000M and S3000L) software components and solutions and provide the capability to achieve the integration into one of the software vendor's other product offerings that support those other S-Series specifications. The future direction of DND is to adopt the S-Series specifications for Integrated Logistics Support (ILS).

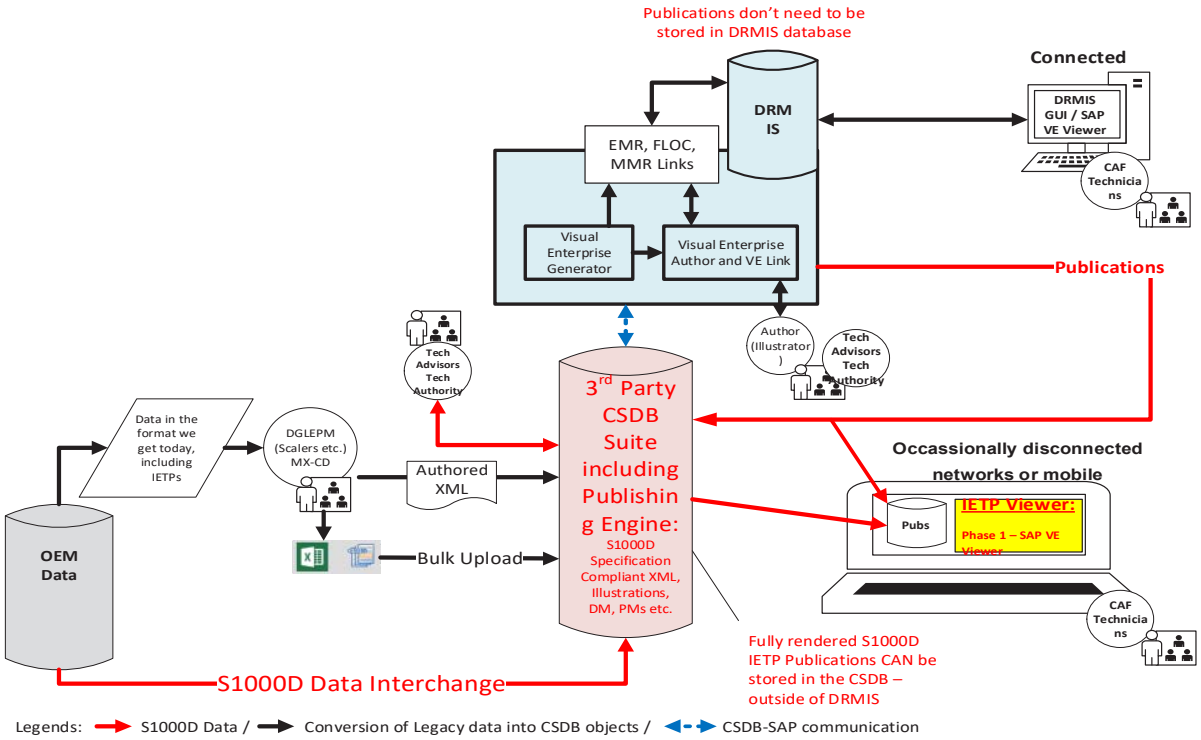
Technical Architecture:

Disclaimer: **What is depicted below is just how DND visualizes the target architecture. The illustrations below are meant only to describe to the reader the solution DND is procuring. Deviations are acceptable as long as the requirements are met.**

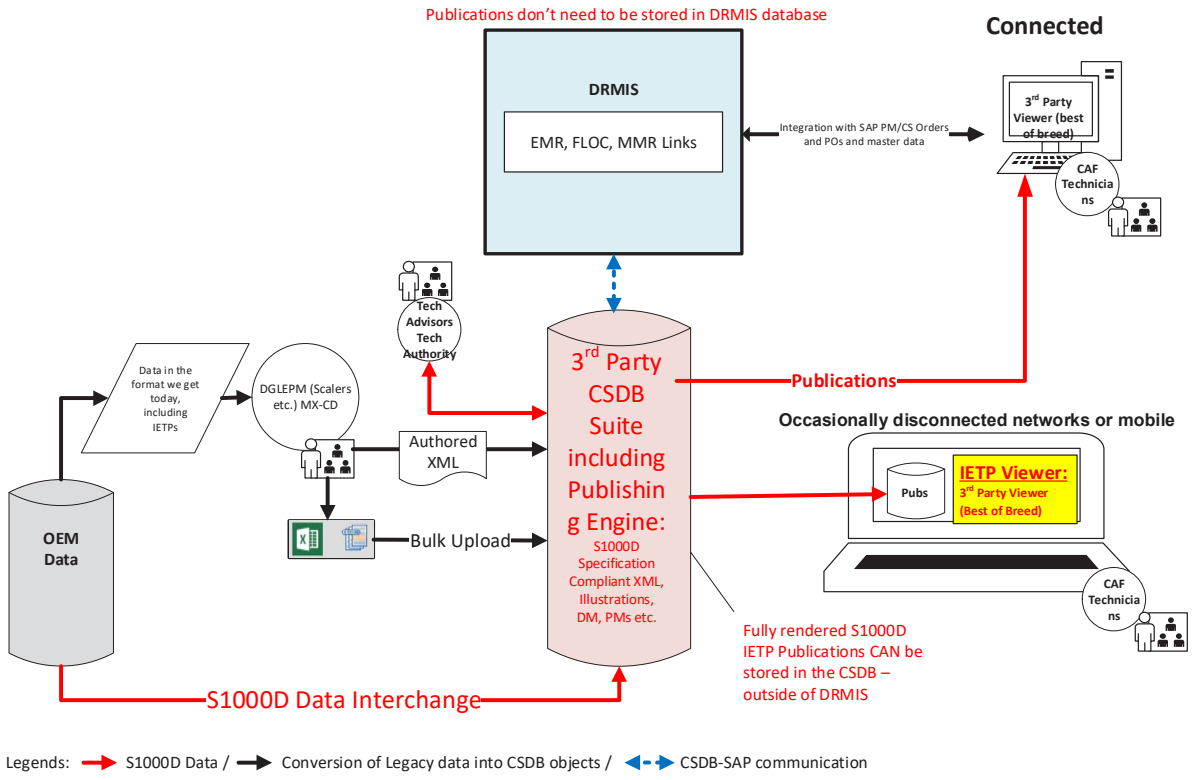
Phase 0.5: **This technical architecture needs to be achieved with keeping future technical architecture in consideration from integration to SAP perspective (either Option-1 or Option-2 for Phase 1.0).**



Phase 1.0 (option-1):



Phase 1.0 (option-2):



3.0 Requirements

3.1. Functional Requirements

3.1.1. The S1000D Technical Publication Management Software Suite (Hereby referred to as "the S1000D software") must contain an S1000D CSDB with the following functions and capabilities:

- Supports the content management and authoring of S1000D Objects including Data Modules (DMs), Publication Modules (PMs), Illustrations etc.; and
- Capabilities must include: S1000D data interchange, Data Module search, and management of relationships between DMs and supporting entities (Illustrations, Graphics and multimedia).

3.1.2. The S1000D software must come with an XML Authoring tool. The authoring tool and the CSDB must work together and also provide the following functions and capabilities:

- Supports the authoring and editing of structured XML content with business rule validation;

- Supports the integration between XML Authoring and a Common Source Database (CSDB);
- Supports creating and editing document components and structures for Page Oriented, Web, and Interactive Electronic Technical Publication (IETP) delivery with S1000D publishing standards;
- Editing of Data Modules (DM), Publication Modules (PM) and Illustrations (ICN);
- Support for all S1000D data module types;
- S1000D schema driven authoring and validation;
- Change tracking;
- DM/PM reference insertion;
- Illustration reference insertion;
- Illustration hot-spot definition;
- Cut/Copy/Paste and drag-and-drop;
- Selection duplication;
- Business Rules validation;
- Access and authorization control; and
- WYSIWYG capability.

3.1.3. The S1000D Software must contain a Technical publication (e.g. Illustrated Parts Catalogue, Owner and Service Manuals etc.) publishing tool with the following functions and capabilities:

- Provides the ability to pull XML and unstructured data from the CSDB, content management systems and business Applications;
- Manipulate and arrange the content, and publish it in various media formats such as: Page Oriented, Web, and Interactive Electronic Technical Publications (IETP);
- Application of styling rules from S1000D Standard;
- Integrate CSDB publishing;
- Multiple Volume Publishing;
- Multiple S1000D Information Set support from version 4.X;
- Version control; and
- Access and Authorization control.

3.1.4. The S1000D Software must contain a Technical Publication Viewing tool (IETP Viewer) with the following capabilities:

- Out of the box support for viewing all S1000D compliant information sets;
- Internet technology to interact with multiple electronic data sources, platforms, browsers, operating systems, and devices;
- Support for central, local and stand-alone IETP deployment;
- Support configurable screen layout, user display preferences, navigation and searching within data module and IETP Structures;
- Provide multiple file format support;
- Allow printing illustrations;
- Access and Authorization control;
- Global data annotation;

- Personal annotation;
- Redlining text;
- Redlining graphics;
- Pan, zoom, expand, magnify;
- Assembly and disassembly;
- Locator Graphics;
- 3D Modelling;
- Navigation that supports next and previous, return (chronological), history of traversed links, system / subsystem navigation, full text search, context search, simultaneous display of multiple objects;
- Support content that includes photos and animation;
- Context sensitive help;
- Hot reference;
- Internal and external reference;
- Table of content, list of figures, tables and photos; and
- Provide multi-lingual support in English and French.

3.1.5. The S1000D IETP Viewer must support all the functions and capabilities listed as “MUST” requirements within the Functionality Matrix as described in Appendix C.

3.1.6. The S1000D IETP Viewer should support all the functions and capabilities listed as “SHOULD” requirements within the Functionality Matrix as described in Appendix C.

3.1.7. When in online mode (connected to SAP ERP), the Viewer component of the S1000D software must have the capability to retrieve and display within the publication, the NATO Stock Number (NSN) associated to the Manufacturer’s Part Number (MPN), and SAP descriptions of each of the MPN and NSN, even when this data is not available in the CSDB (must be read from the SAP ERP).

3.1.8. When in online mode (Connected to the SAP ERP), the Viewer component of the S1000D software must have the capability to integrate with the Plant Maintenance (PM) module within the SAP GUI to allow users to launch the Viewer from the Maintenance Order create, change and display transactions.

The integration to SAP Plant Maintenance must also support SAP web-DynPro and SAP Fiori PM Applications, including the capability to launch the viewer from these applications.

3.1.9. The S1000D Software must support entry of free text search criteria to present a list of qualifying assemblies, and navigate to any illustration based on a hierarchical view of major assemblies, subassemblies and component parts. This requirements is valid for the Viewing and Authoring user experiences.

3.1.10. When the IETP viewer is launched from within the SAP Maintenance/Service order, the S1000D Technical Publication Management suite's Viewer component must have the capability to display the assembly illustration and parts list for the Equipment Master Record (EMR), Functional Location (FLOC) or Material Master Record (MMR) showing a hierarchical view of the referenced object’s structure.

The following sequence of finding the object to be in focus is required – if not available, use FLOC or EMR or MMR (in sequential order).

3.1.11. The view provided by the S1000D software to authors and viewers must have the capability to include, at a minimum:
- the illustration;
- related maintenance procedures; and
- parts lists with quantity, descriptions etc:
  - the SAP Material number, MPN number and NATO Commercial and Governmental Entity (NCAGE) code;
  - the SAP description of the part; and
  - the NATO Stock Number (NSN).

3.1.12. The S1000D software must deliver, enable and support functionality allowing viewers and authors to add additional columns to the parts list.

3.1.13. When launched from within the Maintenance/Service order within SAP, the Viewer component of the S1000D software must have capability to deliver, enable and support functionality allowing a shopping cart type capability where the user can change the quantity to be ordered from the quantity that is proposed in the parts list. The components chosen and respective quantities are to be copied into the Maintenance/Service order's component tab.

3.1.14. The viewer must be able to electronically select parts for maintenance activities from both the assembly illustration and parts list, and add them to a shopping cart with the required quantities that has the ability to be emailed or exported to an external file.

When using the Viewer in offline mode (not connected to SAP), the shopping cart components with material numbers, quantities and other details must be able to be downloaded into a file whose format can be used to asynchronously update SAP maintenance/service orders.

When a user is subsequently in online mode (connected to SAP), the S1000D software must have a capability that allows the user to select the file and initiate the interface that will update the Maintenance/Service Order with the components and quantities in the file.

3.1.15. The Viewer component of the S1000D software must deliver, enable and support graphical user interface (GUI) functionality in both English and French.

3.1.16. The S1000D software must allowing viewers and authors to view illustrations and navigate between them based on a hierarchical view of major assemblies, subassemblies and component parts. The solution must also support Graphical Navigation:
- This is a navigation of the data through graphical representation of the product and its components. Example - From a graphical overview of the aircraft, the user selects a wing, a graphical overview of the wing is presented. The user then selects the flaps. A graphical overview of the flaps

is presented. The user selects the actuator, Information on the actuator is presented

3.1.17. The S1000D software should allow viewers and authors to navigate to a where-used list that shows all assemblies (from CSDB) where the component is a child from:
- the figure/item on an illustration within the software; and
- the BOM reference.

3.1.18. The software must allow linking of Data Module Codes (DMCs) and Publication Module Codes (PMCs) with a component/assembly in S1000D format.

3.1.19. The viewer and authoring component of the S1000D software must support the ability to be configured to add customized selection criteria for listing assemblies (Bills of Materials) and navigate through a hierarchical view. The following are some examples of selection criteria that should be able to be added to the viewer component of the solution: SAP Equipment Master Records, SAP Functional Locations, SAP Material Master Records, SAP Classes and Characteristics, and other SAP fields - including custom fields.

3.1.20. The S1000D software must support a minimum 10 (ten) levels of indenture of each Bill of Material.

3.1.21. The S1000D software's CSDB and authoring tool and viewer based solution must have capability to be upgraded (forward compatible) to integrate with SAP S/4 HANA.

3.1.22. The S1000D software must accept two-dimensional (2D) assembly illustrations received from external vendors and display the referenced assembly illustration in a 2D format.

3.1.23. The S1000D software must accept three-dimensional (3D) assembly illustrations received from external vendors and display the referenced assembly illustration in a 3D format.

3.1.24. File Formats to be supported at minimum are: JPG, .TIF, .PNG, .BMP, .GIF, .PDF, .AI, SVG, CGM and AutoCAD DXF.

3.1.25. The S1000D software (functionality of the viewer and WYSIWYG authoring) must provide functionality allowing the viewers and authors to complete the following actions and provide legible results:
- zoom-in
- zoom-out
- zoom to the complete model
- zoom in to a selected portion of the model
- zoom to a particular object
- zoom to the previous or next viewing point

3.1.26. The publishing tool must support fully formatted book version which includes time/date stamps, destruction notices, destruction dates, destruction requirements, security and derivative classification markings, associated warnings and cautions, etc.

3.1.27. The S1000D software should provide functionality allowing authors to move, copy and link objects using drag-and-drop methods within the CSDB Authoring environment.

Examples:

- Change Assembly hierarchies
- Move/Copy BOM items from other objects
- Move/Copy objects from other equipment

3.1.28. The S1000D software should support Red-Lining functionality in following:
- Authoring publications
- Viewing publications

3.1.29. The publication tool should have the capability to publish more than one Publication Module at a time and be managed as a unit (e.g. for changes).

3.1.30. The publication tool should have the functionality of filtering based on applicability at the time of Publishing.

3.1.31. The publication tool should have the capability to publish only portions or areas of a publication module thereby providing the flexibility of the view of data to be published.

3.1.32. The publication tool should have the capability to print all linked data modules referenced in the current data module and should have the capability to print only the screen currently being viewed.

3.1.33. The S1000D IETP viewer should support Multiple Books and DM (Data Module) printing (as described in S1000D v4.2 specification Chapter 6.3.1 Section 2.15.1 – http://authenticate.s1000d.org/ProductList.aspx).

3.1.34. The S1000D software viewer tool should have following capabilities:
- Provide content filtering (applicability)
- Provide acknowledgement of warnings and cautions.

3.1.35. The CSDB Authoring Tool in conjunction with the XML Authoring tool should include following capabilities:
- Cascading style sheet-driven content layout;
- Global search and replace;
- Multiple language spell checking;
- Illustration rendering (WYSIWYG); and
- Comment insertion.

3.1.36. The S1000D software should allow viewers and authors to expose a where-used list for a component in the publication. The where-used list should show a view of all other objects that might be impacted by a change to the selected object.

3.1.37. When in connected mode the S1000D software should have capability to integrate with the Material Management module within SAP to allow viewers to:

- launch the Viewer from SAP transactions ME51N, ME52N, ME21N or ME22N;
- electronically select parts from an assembly illustration or equipment support list; and
- add them in the required quantities, to an SAP purchase requisition or purchase order.

3.1.38. The S1000D software Viewer should have capability to integrate with the Plant Maintenance (PM) module within SAP to allow viewers to select a related procedure from within an illustration and add:

- The activities in the procedure to operations in the Operations tab of an SAP maintenance/service order; and its components to the Components Overview tab of the order.
- During SAP Task list maintenance (Master Data), have the ability to navigate to the publication's procedure and copy activities and components from the procedure to the SAP Task List master data.

3.1.39. The S1000D software should support the usage of Arbortext or technical authority approved equivalent, as the XML Authoring tool component of the solution's authoring function (CSDB + XML Authoring tool).

3.1.40. The viewer should have the capability to expose within the publication, details of the SAP material master or Equipment Master that are not stored in the CSDB while in connected (or online) mode.

- SAP material master or Equipment characteristics and their values from the SAP Classification system
- Any attribute of the Equipment or Material master.

3.1.41. The Viewer component of the S1000D software must have the capability to integrate with the Materials Management (MM) module within SAP to allow viewers and authors to branch from a selected item within the Viewer and display material master data contained in the MM module without leaving the S1000D Technical Publication Management Viewer experience.

3.1.42. In support of SAP Defence Forces & Public Security SAP Industry Solution (DFPS) on a standalone server, the S1000D software should have capability to replicate changes made to S1000D data in the central repository to other local or standalone instances.

3.1.43. The CSDB / XML / Publication authoring tool should provide authors to update occurrences of an object on multiple illustrations from within one illustration.

3.2. Technical Requirements

3.2.1. The Contractor must provide maintenance and support services to include upgrades and patches as required to maintain interoperability of the S1000D software with SAP as and when enhancement packs, service packs and OSS notes, released by SAP to their customers, are implemented by DND.

3.2.2. The S1000D Software must be based on Commercial Off-the-Shelf (COTS) software:

- Customization of the COTS solutions to add integration and GUI functionality that is not out of the box is acceptable;
- The solution must be built on top of the foundation provided by COTS products; and
- The viewer must come with a software development kit (SDK) or similar technology that allows customized coding.

3.2.3. The S1000D software's integration/interfacing technology must have capability to be compatible with SAP ECC 6.0 Enhancement Pack 8 and higher including SAP S/4 HANA.

3.2.4. The S1000D software must work, be complete and interoperate with the Technical Environment described in Appendix B.

3.2.5. The S1000D software must be scalable to accommodate a minimum of 750 viewers and 60 administrators/authors concurrently.

3.2.6. The publication component of the solution must be able to be integrated to a CSDB and be able to exploit S1000D XML data modules and illustrations, and generate publications that could be viewed by the Viewer.

3.2.7. The S1000D software must provide functionality to allow users of the Viewer to export/print sections of the publication being viewed to PDF format, including table of contents, illustrations, bills of material and related part.

3.2.8. The updates to the S1000D software should be done centrally, without the need for replication or packaging to each workstation on a network.

Examples of the types of updates to support:

- Content: SAP Master Data links, BOM links, Changes to parts lists and illustrations, etc.
- System Updates: Hotfixes, enhancements, upgrades, and other changes to the software.

3.2.9. The S1000D software must provide a mechanism that facilitates the transfer of system updates (i.e. enhancements, settings, upgrades) done in a Development landscape to Quality landscape and then to Production landscape.

3.2.10. The development environment changes should be able to be distributed to the production environment without requiring executable code to be installed on the production environment's servers.

3.2.11. The Viewer component of the S1000D software should have capability to integrate with applications that support web services integration technology.

3.2.12. The S1000D Software should support the distribution of only delta changes to publications made centrally to occasionally disconnected networks (AKA deployed) or occasionally disconnected mobile devices.

3.2.13. The integration technology of the IETP viewer and CSDB components of the solution should include the following:

- A set of Application Programming Interfaces (API)s that can use web-services technology to communicate with external applications;
- SAP specific Business Application Programming Interfaces (BAPIs)/ Remove Function Calls (RFC)s that are designed to work specifically with SAP integration technology; and
- APIs that can be customized in to work with SAP integration technology.

3.3. Security Requirements

3.3.1. The S1000D software must provide the functionality for designated users to create and maintain data access rules (i.e. Access Control Lists) to restrict the ability of users to view documents in a similar way as that which is described in Appendix B – Technical Environment.

3.3.2. There must be functionality that supports the authorization control of which publications can be viewed by which users both when accessing the publications from the stand alone mobile experience and when the publications are opened from within the SAP user's experience.

3.3.3. The S1000D software must provide the capability to manage additions, deletions, changes and publishing of the content based on access rights. The following capabilities must include but are not limited to the following:

- Passive Change indications and Markings;
- Activate Change indications and Markings;
- Full Change;
- Block Cycle and Urgent Changes.

3.3.4. The S1000D software should be capable of encrypting illustrations when extracted to a removable medium. Examples of removable mediums include but are not limited to:

- USB key;
- CD; or
- DVD.

3.4. Content Management Requirements

3.4.1. The S1000D software must provide functionality allowing authors to add new illustrations to the solution.

3.4.2. The S1000D software must provide functionality allowing authors to link a publication to its corresponding SAP business objects (Equipment, Functional location and assembly).

3.4.3. The S1000D software must provide functionality allowing authors to link each figure/item on an illustration to its corresponding BOM reference and related part detail.

This means building the document-to-document, document-to-component, component-to-component relationships that build the product structure.

3.4.4. The S1000D software must provide functionality allowing authors to make changes to a component within an illustration without breaking links of other components on the illustration to related part numbers on the bill of materials.

Notably, when a BOM changes over time, the authors must be able to make updates without "re-writing" the associated parts list. This also alludes to vendor's method for hot-spotting/hyperlinking illustrations and parts lists.

This includes swapping out components, and making design changes to components/assemblies/illustrations.

3.4.5. The S1000D Software must accept, store and manage S1000D issue 4.x or above compliant CSDB objects (data modules, publication modules, etc.). There must be a capability of integration of the CSDB Content to and from SAP Visual Enterprise Generator.

3.4.6. The S1000D software must accept automated bulk upload of assembly illustrations, BOM’s and related part detail. This automated bulk upload must be supported to load into the CSDB.

3.4.7. The S1000D software must allow the Viewers to download stored illustrations and related part detail selected by the viewer to a disk (CD or DVD) or other removable storage device.

3.4.8. The S1000D software must have a centralized solution for Business Rules Exchange (BREX) management.

BREX solution must support the creation of custom validation rules for content management transactions such as creating a Document-Component relationship.

Example custom validation rules support - if the status of a component is such that it is flagged for deletion, a warning should be issued when users try to use the component during authoring.

3.4.9. The S1000D software must have the functionality that will allow archiving illustrations and other CSDB content, including fully rendered IETPs.
- It must be capable of moving CSDB content that is no longer actively used to a separate secondary data storage device for long-term retention;
- There must be an ability to flag items for deletion, revert to an archived version of an IETP, book, illustration, or BOM, and import an archived version for review.

3.4.10. The S1000D software must provide functionality allowing administrators, authors and viewers to review and recover archived data.

3.4.11. The S1000D software must have record-locking and check-in/check-out functionality when editing to enable content accuracy.

3.4.12. The S1000D software must have the capability to produce, manage, display and publish the following types of common information sets and publications as defined by S1000D Issue 4.x:
- Common information sets - Crew/Operator information;
- Common information sets - Description and operation;
- Common information sets - Maintenance information;
- Common information sets - Wiring data;
- Common information sets - Maintenance planning information;
- Common information sets - Mass and balance information;
- Common information sets - Recovery information;
- Common information sets - Equipment information;
- Common information sets - Weapon loading information;
- Common information sets - Cargo loading information;
- Common information sets - Stores loading information;
- Common information sets - Role change information;
- Common information sets - Battle damage assessment and repair information;
- Common information sets - Illustrated tool and support equipment information;
- Common information sets - Service bulletins;
- Common information sets - Material data; and
- Common information sets - Common information and data.

3.4.13. The S1000D software should produce, manage, display and publish the following types of publications as defined by S1000D Issue 4.x:
- Air specific publications - Aircrew information;
- Air specific publications - Cross servicing guide; and
- Land/Sea specific publications.

3.4.14. The S1000D software must produce, manage, display and publish the following elements of publications as defined by S1000D Issue 4.x:
- Common requirements - Front matter;
- Common requirements -Technical content; and
- Common requirements - Illustrated parts data.

3.4.15. The S1000D software must accept or convert as a minimum the following file formats for data loads of illustrations and Excel files:

.CSV to support bulk uploads. (Similarly, we can support comma or tab delimited .TXT files and some other formats for bulk load via SAP Data Services, Infosphere or other ETL (Extract, Transform, Load) tools).

File format support for illustrations:
.JPG, .TIF, .PNG, .BMP, .GIF, .PDF, .AI, SVG, CGM and AutoCAD DXF.

3.4.16. The S1000D software should be able to handle multiple file formats in addition to those listed in the mandatory requirement (e.g. VDS, Video, Audio, 3D files, Miscellaneous, etc.) and as defined in chapter 7.3.3 of S1000D (v4.2) specification.

3.4.17. When content is coming into the CSDB from an external source (e.g. from OEM), the S1000D software must have workflow support that will allow the approval of the content being consumed before it can be used in publications or authoring. This is required so that there is some control over what data can be used to either publish new or change existing publications.

3.4.18. The S1000D Software must accept, store support and manage multiple S1000D versions.

3.4.19. The solution should have multiple S1000D version support for all relevant information sets listed in the functionality matrix (Appendix C) that are marked as “MUST”.

3.4.20. The solution should have multiple S1000D version support for all relevant information sets listed in the functionality matrix (Appendix C) that are marked as “NICE”.

3.5. Performance Requirements

3.5.1. The document response time for the S1000D Software must be less than 10 seconds.

3.6. Reporting Requirements

3.6.1. The S1000D Software must allow the viewer and author to create custom queries and save these for later use.

3.6.2. The S1000D software must have an export function that makes data available in MS Excel 2010 (or later) format.

4.0 Tasks

4.1. The contractor must provide a project plan and schedule outlining the work described in sections 4 and 5 of this Statement of Requirements.

4.2. The contractor must work with the DND technical team to design the enterprise architecture for the S1000D software footprint within the DND infrastructure.

4.3. The contractor must provide a master test plan that outlines the procedures for testing the system.

4.4. The contractor must provide implementation plan.

4.5. The contractor must install, configure, develop and test the S1000D software within the DND infrastructure.

4.6. The contractor must develop a training plan and provide user training. Training will be conducted for the three different roles; viewer, author/publisher and administrator.

4.7. The contractor must providing the in-service support.

4.8. The contractor must develop a release management plan.

5.0 Deliverables

5.1.1. List of deliverables (with association of tasks):

- Approved High Level Project Management Plan (PMP)
- WBS (Work Breakdown Structure) – Detailed Project Plan
- Project Status reports
- Approved Master Test Plan
- Training Strategy and Plan
- Release Management Plan
- Issue/Risk Management Plan with logs
- Functional & technical specifications for custom developed objects
- Optional Data Migration Strategy and Plan (for legacy publication data)

5.1.2. The contractor must provide a Technology Blueprint comprised of a detailed architecture diagram which includes major software (i.e. Database, application, desktop, web services, virtualization, etc.), hardware components and resource sizing requirements (i.e. Memory, CPU, etc.), for the optimal performance of the proposed S1000D Software, in accordance with DND's Technical Environment in Appendix B

5.1.3. The S1000D software has been installed and software agreements have been provided to the Technical Authority.

5.1.4. The contractor must provide a requirements compliance report demonstrating that the software meets DND's requirements.

- Compliance summary report must contain following:
  - Requirement Traceability Matrix
  - UAT completed
  - No critical / high defects open
  - Technical sign-off
  - Security sign-off
  - Data conversion (optional) completed

6.0 Architecture, Environnent, Infrastructure, Service Orientation & Platform

The S1000D Technical Publication Management software suite must function within the Technical Environment described in Appendix B.

7.0 Optional Task Authorized Work

7.1. The Contractor must provide the following services on "as and when" requested basis:

a. Training for DND personnel;
b. Special Investigations & Technical Studies (SITS);
c. Additional Work Arising (AWA).

7.2. Resource Categories

7.2.1. Project Manager

- Work collaboratively with the DDRMIS management team to ensure task objectives are met;
- Manage project risks, mitigation strategies, project issue resolution and follow-up actions;
- Define, document and maintain project and resource utilization plans; determine budgetary requirements, the composition, roles and responsibilities and terms of reference;
- Conduct meetings with the project team and stakeholders and provide written status of activities including financial reporting on a weekly basis based on outlined reporting requirement and
- Conducting post project reviews/lessons learned.

7.2.2. Solution Architect

- Develop technical architectures, frameworks and strategies, either for an organization or for a major application area, to meet the business and application requirements

- Identify the policies and requirements that drive out a particular solution
- Analyze and evaluate alternative technology solutions to meet business problems
- Ensures the integration of all aspects of technology solutions
- Monitor industry trends to ensure that solutions fit with government and industry directions for technology
- Analyze functional requirements to identify information, procedures and decision flows
- Evaluate existing procedures and methods, identify and document database content, structure, and application sub-systems, and develop data dictionary
- Define and document interfaces of manual to automated operations within application sub-systems, to external systems and between new and existing systems
- Define input/output sources, including detailed plan for technical design phase, and obtain approval of the system proposal
- Identify and document system specific standards relating to programming, documentation and testing, covering program libraries, data dictionaries, naming conventions, etc.; and
- Provide knowledge transfer to departmental personnel on an on-going basis.

7.2.3. Programmer/Analyst – Functional

- Facilitate, lead and/or provide expert advice in workshops or meetings to collect and refine business requirements with clients and end users and assess the impacts of the project designs. Minutes or a summary report must be produced;
- Develop and document functional, business, system interface designs and system requirements by analyzing the requirements. Recommend system designs and solutions to address requests or prepare the software for the proposed changes related to the requirements or other software's roadmap projects;
- Lead in the design and development of detailed functional specifications for complex designs and development activities including workflows, reports, interfaces, conversions, and enhancements;
- For complex solutions that have integration impacts, lead in the designing, configuring, implementation and testing of changes to the S1000D software within the DND architecture; and
- Provide knowledge transfer to departmental personnel on an on-going basis.

7.2.4. Programmer/Analyst – Technical

- Create and modify code within the S1000D software;
- Create and modify screens and reports within the S1000D software;

- Produce forms, manuals, programs, data files, and procedures for systems and/or applications; and
- Provide knowledge transfer to departmental personnel on an on-going basis.

7.2.5. Tester

- Develop test scenarios and test scripts;
- Execute software testing procedures for unit test, integration testing and regression testing with emphasis on automating the testing procedures as per the test strategies and processes;
- Establish validation and verification capability which assumes functional and performance compliance; and
- Provide knowledge transfer to departmental personnel on an on-going basis.

8.0 Optional SAP Integration

The contractor must provide services to execute Phase 1.0 activities; the integration to SAP within the CSDB and Viewer.

The contractor must test the integration to SAP, which will address the following touch-points:

1. Punch-out from the SAP work order to the publication;
2. Copying components from the publication to the SAP work order.

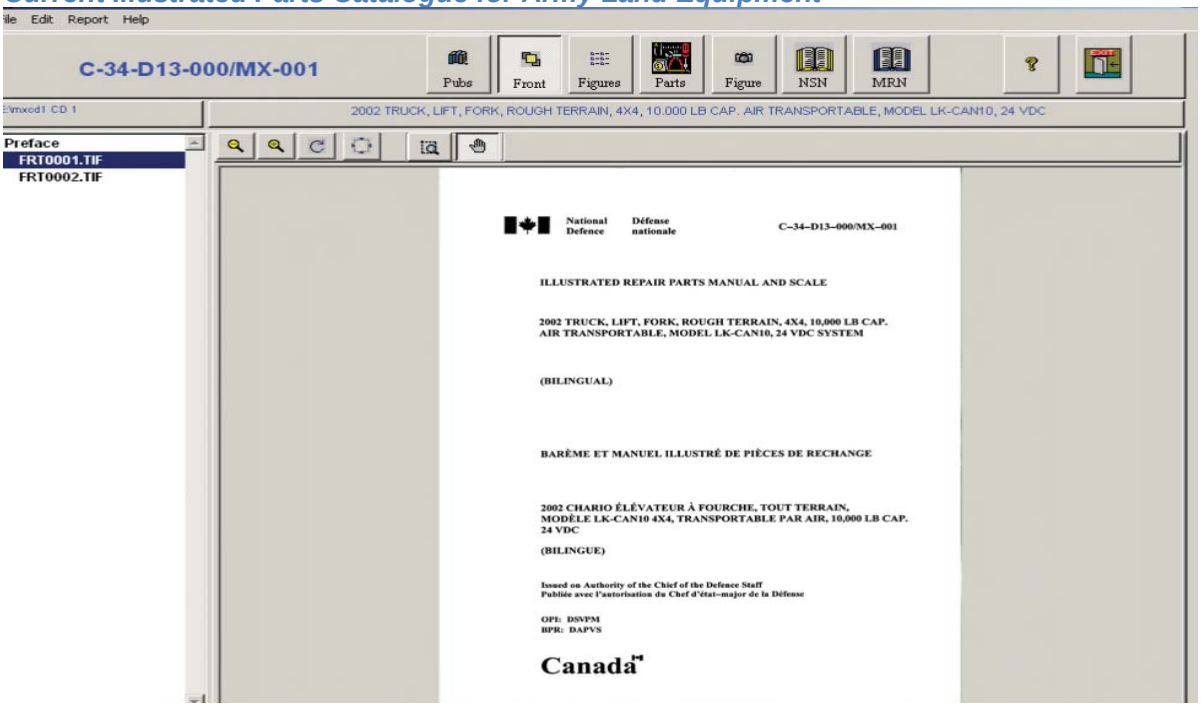
Appendix A – Legacy Environment

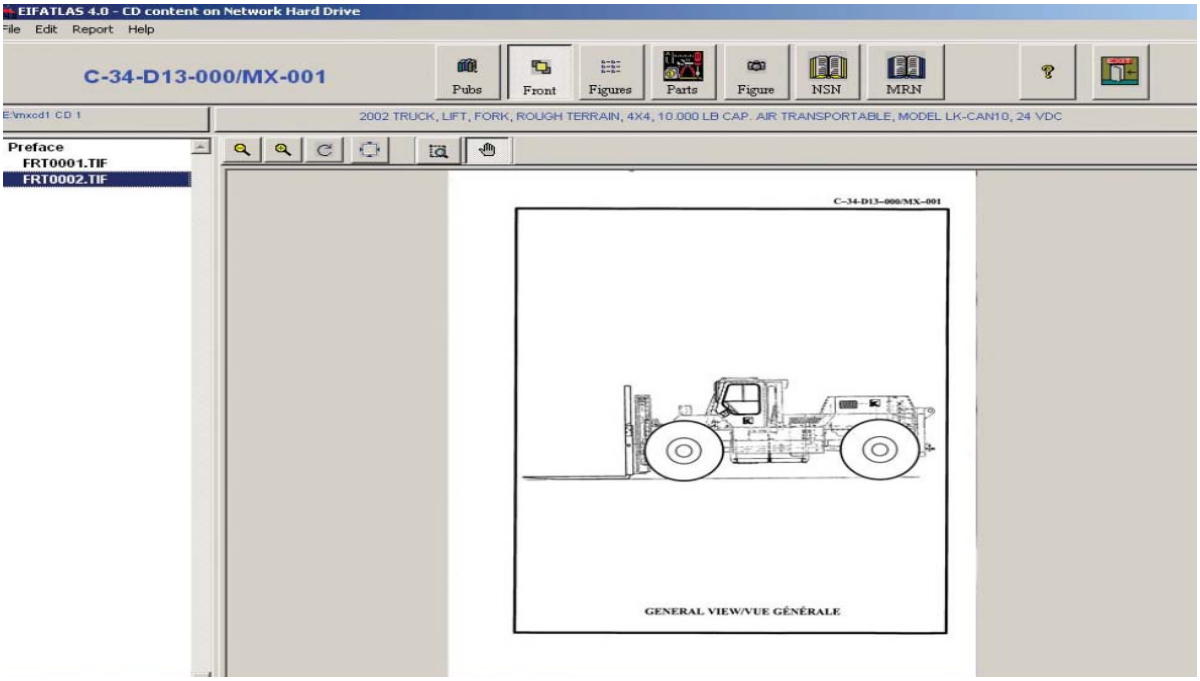
DND currently uses an application called Equipment Item File (EIF) Atlas (more widely referred to as MXCD) to support and facilitate maintenance of its vehicle fleets and auxiliary equipment. The EIF Atlas was developed by DND as an easy-to-use tool for the technician and does not integrate with DRMIS.

The EIF Atlas has two main components:

i. An illustration viewer and navigation application used to locate a part on an illustration plus its related supporting detail; and
ii. An Equipment Support List (ESL) structure required to support the equipment.

Current Illustrated Parts Catalogue for Army Land Equipment

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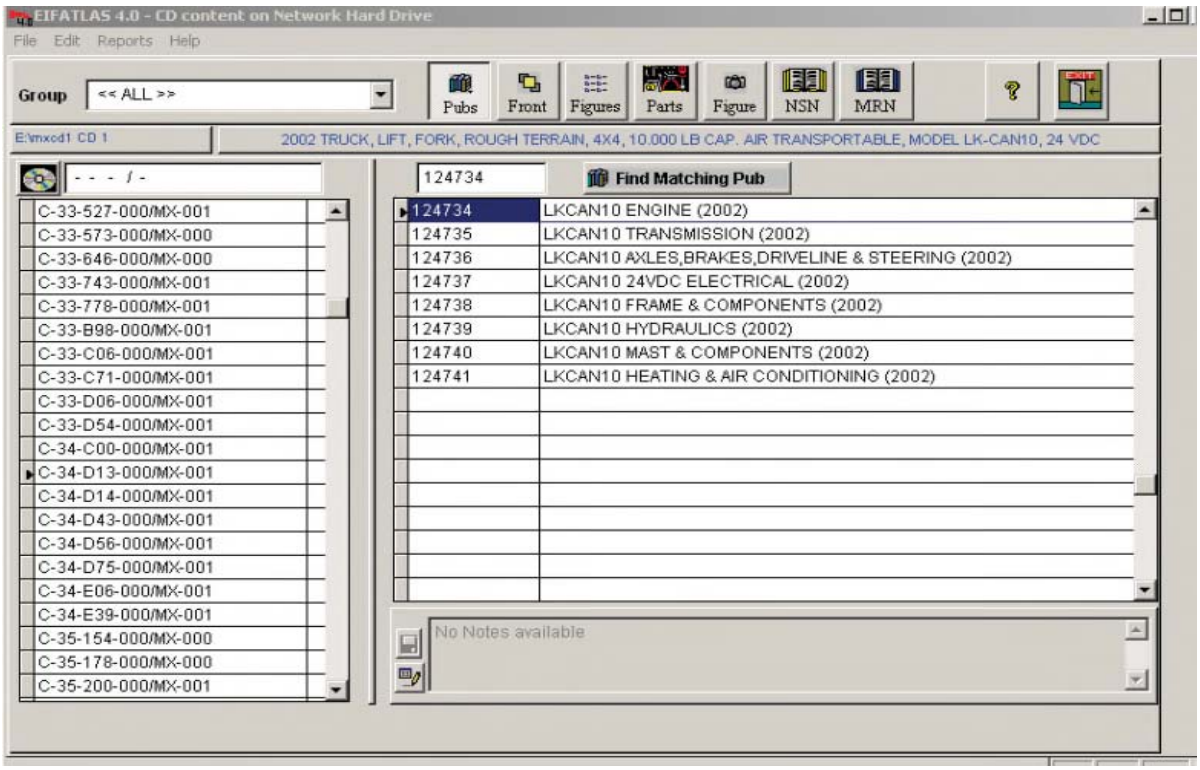
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124734 LKCAN10 ENGINE (2002)
124735 LKCAN10 TRANSMISSION (2002)
124736 LKCAN10 AXLES,BRAKES,DRIVELINE & STEERING (2002)
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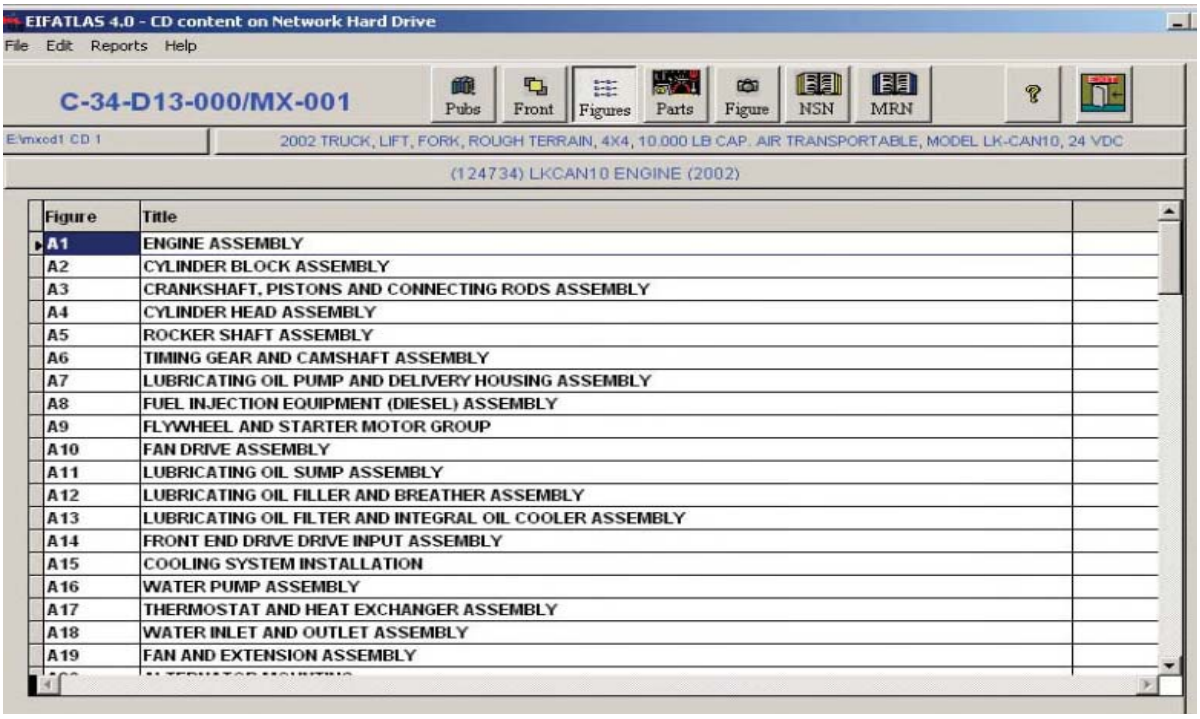
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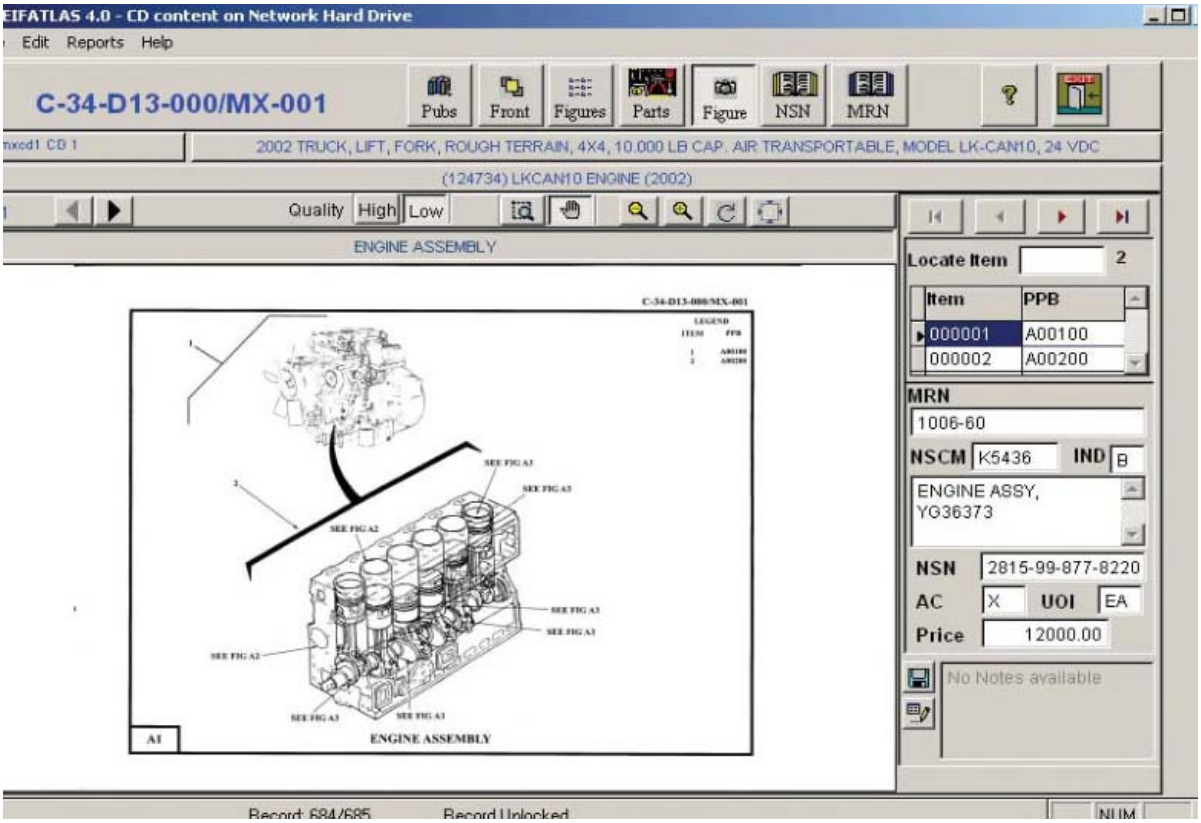
(124734) LKCAN10 ENGINE (2002)
Figure Title
A1 ENGINE ASSEMBLY
A2 CYLINDER BLOCK ASSEMBLY
A3 CRANKSHAFT, PISTONS AND CONNECTING RODS ASSEMBLY
A4 CYLINDER HEAD ASSEMBLY
A5 ROCKER SHAFT ASSEMBLY
A6 TIMING GEAR AND CAMSHAFT ASSEMBLY
A7 LUBRICATING OIL PUMP AND DELIVERY HOUSING ASSEMBLY
A8 FUEL INJECTION EQUIPMENT (DIESEL) ASSEMBLY
A9 FLYWHEEL AND STARTER MOTOR GROUP
A10 FAN DRIVE ASSEMBLY
A11 LUBRICATING OIL SUMP ASSEMBLY
A12 LUBRICATING OIL FILLER AND BREATHER ASSEMBLY
A13 LUBRICATING OIL FILTER AND INTEGRAL OIL COOLER ASSEMBLY
A14 FRONT END DRIVE DRIVE INPUT ASSEMBLY
A15 COOLING SYSTEM INSTALLATION
A16 WATER PUMP ASSEMBLY
A17 THERMOSTAT AND HEAT EXCHANGER ASSEMBLY
A18 WATER INLET AND OUTLET ASSEMBLY
A19 FAN AND EXTENSION ASSEMBLY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(124734) LKCAN10 ENGINE (2002)
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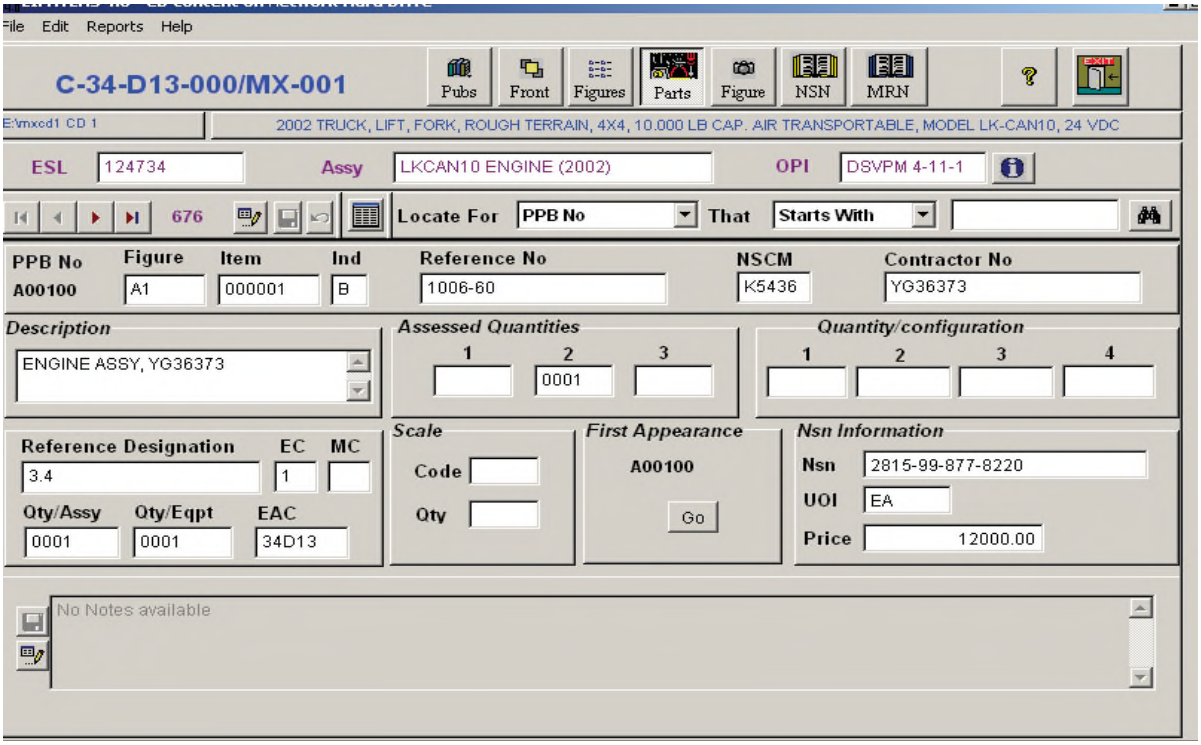

Exploded View

2002 TRUCK, LIFT, FORK, ROUGH TERRAIN, 4X4, 10.000 LB CAP. AIR TRANSPORTABLE, MODEL LK-CAN10, 24 VDC

Publication: C-34-D13-000/MX-001
ESL: 124734 LKCAN10 ENGINE (2002)
Figure: A1

PAGE: 1
DATE: 13/02/2013

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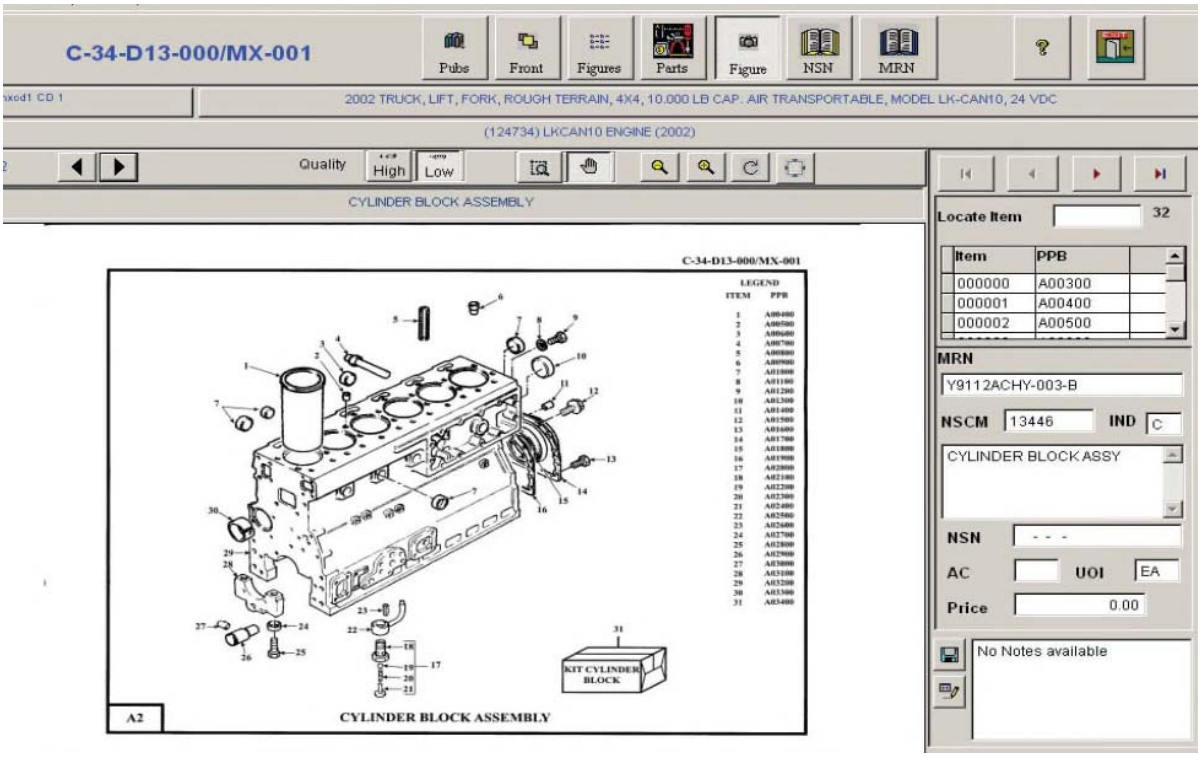

2002 TRUCK, LIFT, FORK, ROUGH TERRAIN, 4X4, 10.000 LB CAP. AIR TRANSPORTABLE, MODEL LK-CAN10, 24 VDC

Publication: C-34-D13-000/MX-001
ESL: 124734 LKCAN10 ENGINE (2002)
Figure: A2

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DATE: 13/02/2

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(124734) LKCAN10 ENGINE (2002)

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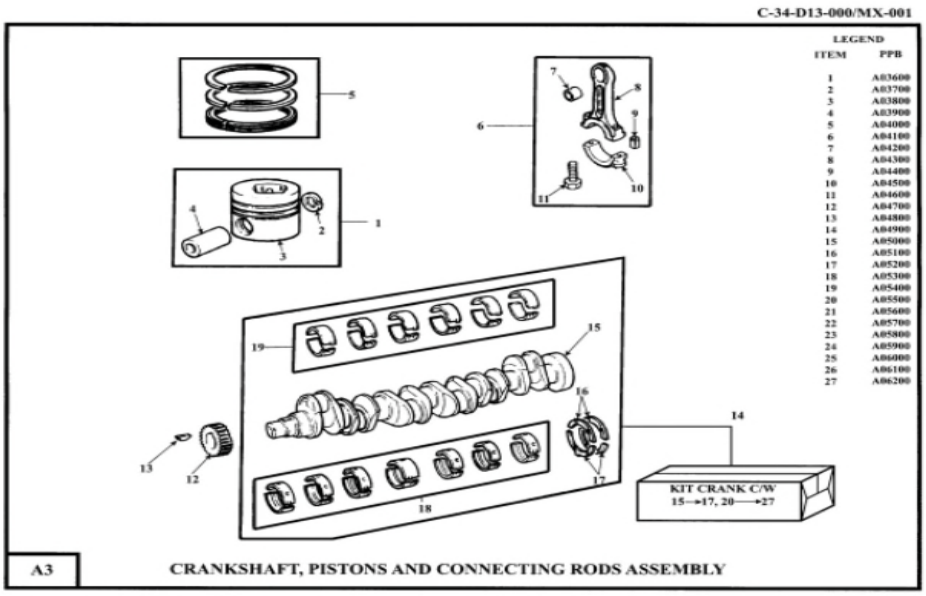

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Publication: C-34-D13-000/MX-001 PAGE:
ESL: 124734 LKCAN10 ENGINE (2002) DATE: 1:
Figure: A3

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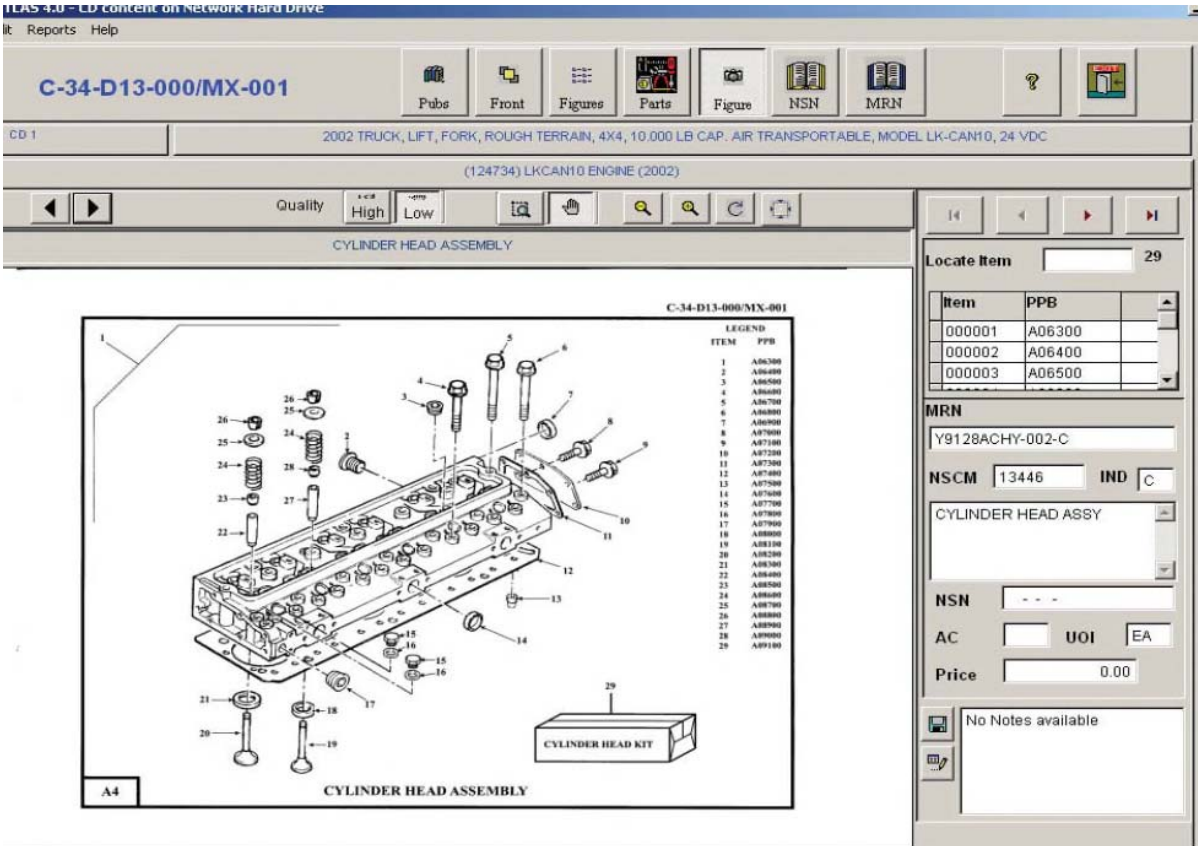
000001	A03600		U5LP0057	13446		KIT, PISTON	EA		$0.00		0006	
000002	A03700		2721332	13446		CIRCLIP	EA		$0.00		0002	
000003	A03800		NONUMBER4	13446		PISTON	EA		$0.00		0001	
000004	A03900		NONUMBER5	13446		PIN PISTON	EA		$0.00		0001	
000005	A04000		4181A033	13446		KIT, PISTON RING	EA		$0.00		0006	
000006	A04100		ZZ90186	13446		KIT, CONROD	EA		$0.00		0006	
000007	A04200		3112E011	13446		BUSH	EA		$0.00		0001	
000008	A04300		NONUMBER6	13446		ROD CON	EA		$0.00		0001	
000009	A04400		3246A001	13446		DOWEL	EA		$0.00		0002	
000010	A04500		NONUMBER7	13446		CAP	EA		$0.00		0001	
000011	A04600		32186142	13446		SCREW	EA		$0.00		0002	
000012	A04700		3117C061	13446		GEAR, CRANKSHAFT	EA		$0.00		0001	
000013	A04800		0500012	13446		WOODRUFF KEY	EA		$0.00		0001	
000014	A04900		ZZ90085	13446		KIT, CRANKSHAFT	EA		$0.00		0001	
000015	A05000		NONUMBER8	13446		CRANKSHAFT	EA		$0.00		0001	
000016	A05100		31137551	13446		THRUST WASHER, STANDARD	EA		$0.00		0002	
000017	A05200		31137561	13446		THRUST WASHER, STANDARD	EA		$0.00		0002	
000018	A05300		U5MB0007	13446		KIT, BEARING, STANDARD	EA		$0.00		0001	
000019	A05400		U5ME0003	13446		KIT, BEARING, STANDARD	EA		$0.00		0001	
000020	A05500		U5MB0007A	13446		KIT. BEARING, (-)0,25MM	EA		$0.00		0001	
000021	A05600		U5MB0007B	13446		KIT, BEARING, (-)0.50MM	EA		$0.00		0001	
000022	A05700		U5MB0007C	13446		KIT, BEARING, (-)0,75MM	EA		$0.00		0001	
000023	A05800		U5ME0003A	13446		KIT, BEARING, (-)0.25MM	EA		$0.00		0001	
000024	A05900		U5ME0003B	13446		KIT, BEARING, (-)0.50MM	EA		$0.00		0001	

Exploded View

2002 TRUCK, LIFT, FORK, ROUGH TERRAIN, 4X4, 10.000 LB CAP. AIR TRANSPORTABLE, MODEL LK-CAN10, 24 VDC

Publication: C-34-D13-000/MX-001 PAGE:
ESL: 124734 LKCAN10 ENGINE (2002) DATE: 13/02/2
Figure: A4

ITEM	PPB	NSN	Manufacturer Ref No	NSCM	CRN	Name	UOI	AC	Price	Qty [	A	B	C
000001	A06300		Y9128ACHY-002-C	13446		CYLINDER HEAD ASSY	EA		$0.00		0001		
000002	A06400		3212P022	13446		PLUG	EA		$0.00		0001		
000003	A06500		650586	13446		PLUG	EA		$0.00		0006		
000004	A06600	5306-01-303-3897	32166219	13446		BOLT	EA	X	$31.64		0012		
000005	A06700	5306-01-303-3898	32166222	13446		SCREW	EA	X	$15.67		0002		
000006	A06800	5306-01-303-5619	32166221	13446		BOLT	EA	X	$8.16		0018		
000007	A06900		32418122	13446		PLUG	EA		$0.00		0001		
000008	A07000	5306-01-428-7030	2314K166	13446		SCREW	EA	X	$2.75		0006		
000009	A07100	5305-01-336-3168	2314H002	13446		SCREW	EA	X	$1.27		0003		
000010	A07200		U3623H024	13446		COVER	EA		$0.00		0001		
000011	A07300		U3685R009	13446		JOINT	EA		$0.00		0001		
000012	A07400		3681H208	13446		HEAD GASKET	EA		$0.00		0001		
000013	A07500		29990001	13446		DOWEL	EA		$0.00		0002		
000014	A07600		0650710	13446		PLUG	EA		$0.00		0003		
000015	A07700		0650203	13446		PLUG	EA		$0.00		0002		
000016	A07800		2411157	13446		WASHER	EA		$0.00		0002		
000017	A07900		2431154	13446		PLUG	EA		$0.00		0001		
000018	A08000		3314A051	13446		INSERT	EA		$0.00		0006		
000019	A08100		3142D031	13446		VALVE EXHAUST	EA		$0.00		0006		
000020	A08200		3142D041	13446		VALVE INLET	EA		$0.00		0006		
000021	A08300		3314A061	13446		INSERT	EA		$0.00		0006		
000022	A08400		3318A721	13446		GUIDE	EA		$0.00		0006		
000023	A08500		U2418M506	13446		SEAL	EA		$0.00		0006		
000024	A08600		3174T003	13446		SPRING	EA		$0.00		0012		
000025	A08700		3342N011	13446		CAP	EA		$0.00		0012		
000026	A08800		3142W004	13446		COTTER	EA		$0.00		0024		
000027	A08900		3318A711	13446		GUIDE	EA		$0.00		0006		



Exploded View

2002 TRUCK, LIFT, FORK, ROUGH TERRAIN, 4X4, 10.000 LB CAP. AIR TRANSPORTABLE, MODEL LK-CAN10, 24 VDC

Publication: C-34-D13-000/MX-001 PAGE:
ESL: 124734 LKCAN10 ENGINE (2002) DATE: 13/02/2
Figure: A4

ITEM	PPB	NSN	Manufacturer Ref No	NSCM	CRIT	Name	UOI	AC	Price	Qty [	A	B	C
000001	A06300		Y9128ACHY-002-C	13446		CYLINDER HEAD ASSY	EA		$0.00		0001		
000002	A06400		3212P022	13446		PLUG	EA		$0.00		0001		
000003	A06500		650586	13446		PLUG	EA		$0.00		0006		
000004	A06600	5306-01-303-3897	32166219	13446		BOLT	EA	X	$31.64		0012		
000005	A06700	5306-01-303-3898	32166222	13446		SCREW	EA	X	$15.67		0002		
000006	A06800	5306-01-303-5619	32166221	13446		BOLT	EA	X	$8.16		0018		
000007	A06900		32418122	13446		PLUG	EA		$0.00		0001		
000008	A07000	5306-01-428-7030	2314K166	13446		SCREW	EA	X	$2.75		0006		
000009	A07100	5305-01-336-3168	2314H002	13446		SCREW	EA	X	$1.27		0003		
000010	A07200		U3623H024	13446		COVER	EA		$0.00		0001		
000011	A07300		U3685R009	13446		JOINT	EA		$0.00		0001		
000012	A07400		3681H208	13446		HEAD GASKET	EA		$0.00		0001		
000013	A07500		29990001	13446		DOWEL	EA		$0.00		0002		
000014	A07600		0650710	13446		PLUG	EA		$0.00		0003		
000015	A07700		0650203	13446		PLUG	EA		$0.00		0002		
000016	A07800		2411157	13446		WASHER	EA		$0.00		0002		
000017	A07900		2431154	13446		PLUG	EA		$0.00		0001		
000018	A08000		3314A051	13446		INSERT	EA		$0.00		0006		
000019	A08100		3142D031	13446		VALVE EXHAUST	EA		$0.00		0006		
000020	A08200		3142D041	13446		VALVE INLET	EA		$0.00		0006		
000021	A08300		3314A061	13446		INSERT	EA		$0.00		0006		
000022	A08400		3318A721	13446		GUIDE	EA		$0.00		0006		
000023	A08500		U2418M506	13446		SEAL	EA		$0.00		0006		
000024	A08600		3174T003	13446		SPRING	EA		$0.00		0012		
000025	A08700		3342N011	13446		CAP	EA		$0.00		0012		
000026	A08800		3142W004	13446		COTTER	EA		$0.00		0024		
000027	A08900		3318A711	13446		GUIDE	EA		$0.00		0006		

Appendix B – Technical Environment

Overview

The Defence Resource Management Information System (DRMIS) operates on the Defence Wide Area Network (DWAN) and is an Enterprise Resource Planning (ERP) system which uses SAP software to support operations of the Canadian Armed Forces worldwide.

In addition to the central instance, approximately twenty (20) deployed servers are deployed on ships to support the Navy and the ability to operate in a disconnected communications environment for an extended period of time (up to six (6) months). Each server is a separate instance of SAP and contains a subset of SAP data. DRMIS users on the ships are able to connect to the deployed server in order to conduct maintenance activities and search for parts. Once the ship is able to re-establish a connection to the central server, an internal SAP interface synchronizes the data between the central and deployed servers.

The SAP Mobile Defence & Security (MDS) solution is part of DRMIS and provides access to a small subset of standard SAP processes and data and is intended for use during short periods of disconnected communications while conducting operations in the field. Laptops are installed with the SAP NetWeaver Mobile client. Once the laptop is able to re-establish a connection, synchronization occurs between central SAP database and laptop mobile database.

The DRMIS User Interface Simplification (UIS) tool is a web-based NetWeaver SAP Portal which allows users to conduct maintenance activities and order parts using a simplified user interface.

DND is currently using SAP ECC 6.0 EHP8 SPS 8 & SAP Portal NW 7.5 SPS 9

Technical Elements:

Workstation	Windows 7 and Windows 10 Internet Browser (Internet Explorer version 11.0 and above)
Servers	Microsoft Windows Server 2016 Microsoft SQL 2008 (and above) Microsoft IIS 10.0 (and above) VMWare version 6.5 SUSE Linux v12 SP2 AIX 7.2 z/OS
Relational Database Management System (RDBMS)	DB2 (on z/OS) DB2 LUW
Back-up software	Tivoli Storage Manager 7.8 EMC Networker 18.2
Security Components	McAfee EndPoint 10.6 StormShield by SkyRecon version 7.2 on the Desktop
Network	TCP/IP IPv4 and IPv6

	Microsoft Windows Networking Environment
MDS ABAP System	NW 711 SPS 14 MDS 9(ABAP) Kernel 721 1101
ERP ABAP System (include EA-DFPS Rel 618 Sp08)	EHP8 SPS 8 / NW 750 SP09 - Kernel 749 401

Functional Elements:

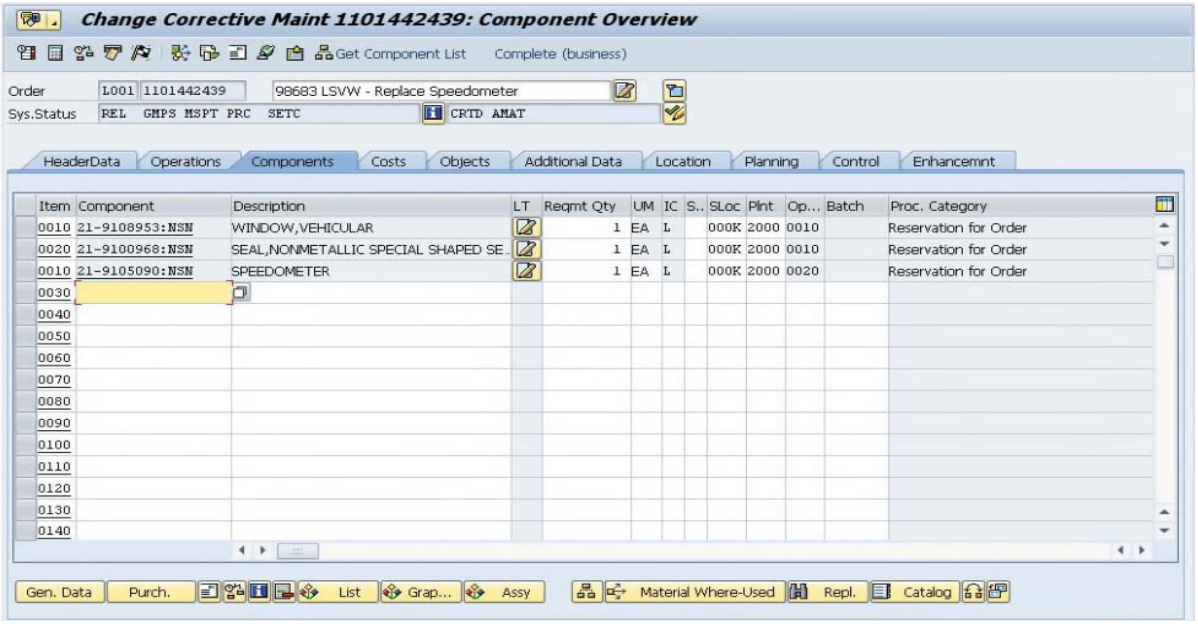
Overview

The Defence Resource Management Information System (DRMIS) operates on the Defence Wide Area (DWAN) and is an Enterprise Resource Planning (ERP) system which uses SAP software to support operations of the Canadian Armed Forces worldwide. The Canadian Army guiding principles direct the use of DRMIS as far forward as possible on operations, during exercises, and in Garrison. While there are future initiatives to expand the use of DRMIS, the current functionality is intended at the unit level to allow for 1st line technicians to directly input requirements into the ERP. In many scenarios, DRMIS connectivity may not be projected as far as the unit level and offline or paper based transactions may need to be utilized.

Mobility on the battlefield and the lack of dedicated communications infrastructure will impose periods of time where a unit is completely off the network. It is critical that during those periods of time where units are completely off the network that there is an off-line process to ensure that when they are submitting paper based requests that they are providing the correct details on the forms as missing information will create errors in the demands and require additional follow-up. Units must ensure to submit all demands for all work orders to maintain accurate inventories.

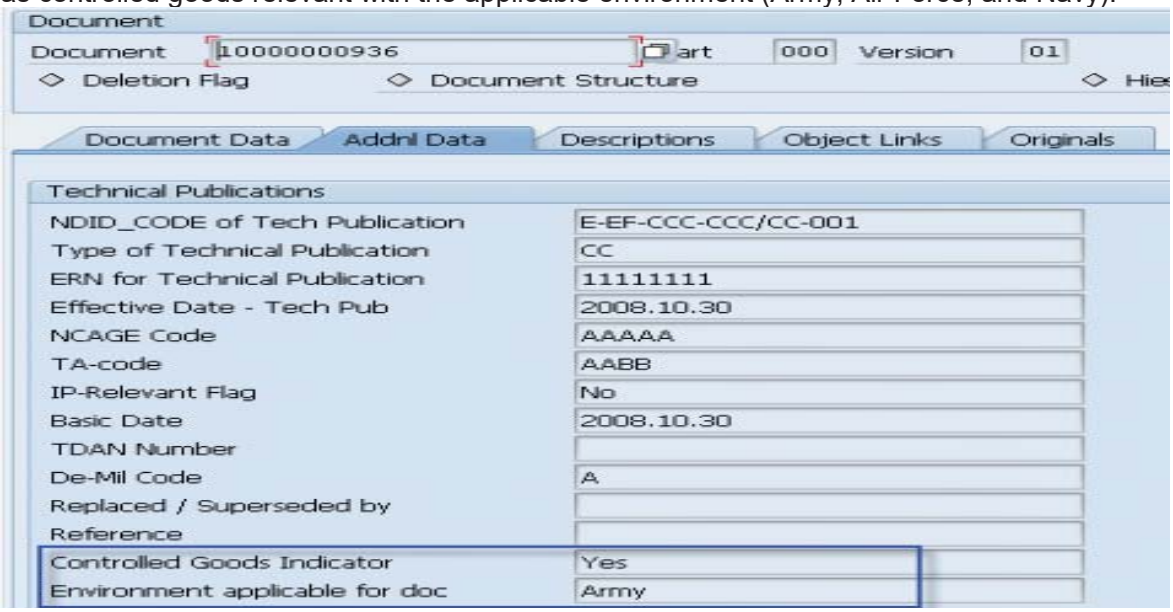
In support of offline scenarios, Canadian Armed Forces maintainers and technicians require the means to quickly and accurately record parts and procedural information to enable the expedient repair of assets in operations, exercises and in Garrison."

Sample Components Overview Tab within SAP Maintenance Order

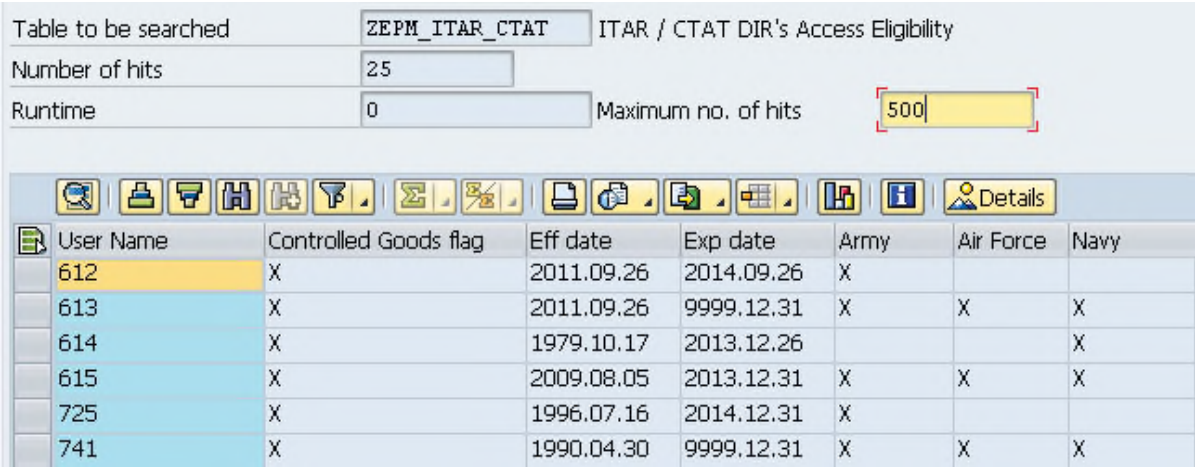


Controlled Goods Documents in DRMIS

Controlled Goods Documents stored in the DRMIS Document Management System are flagged as controlled goods relevant with the applicable environment (Army, Air Force, and Navy).



A custom table is maintained in DRMIS to identify, by DRMIS username, the users who have controlled goods access with the effective date and expiry date of this access and for which environments. It is important to note this table does not contain all DRMIS usernames, only a subset of DRMIS users.



User Name	Controlled Goods flag	Eff date	Exp date	Army	Air Force	Navy
612	X	2011.09.26	2014.09.26	X		
613	X	2011.09.26	9999.12.31	X	X	X
614	X	1979.10.17	2013.12.26			X
615	X	2009.08.05	2013.12.31	X	X	X
725	X	1996.07.16	2014.12.31	X		
741	X	1990.04.30	9999.12.31	X	X	X

Appendix C - Functionality Matrix

Functionality	Complexity – Page	Complexity – IETP	Requirement	All information sets	Front Matter	Crew / operator	Description and operation	Maintenance procedures	Fault isolation	Non-destructive testing	Corrosion control	Storage	Wiring data	Illustrated parts data	Maintenance planning	Mass and balance	Recovery	Equipment	Weapon loading	Cargo loading	Stores loading	Role change	BDAR	Illust'd tool & support equip.	Service bulletins	Material data	Common info. & data
Access																											
Login	3	3	MUST	A																							
Suspend and restart	1	1	NICE	A																							
Exit	1	2	NICE	A																							
Annotation																											
Action complete indicator (checkbox)	1	1	NICE	A																							
Global data annotation	2	2	MUST	A																							
Local data annotation	2	2	NO																								
Personal annotation	1	1	MUST	A																							
Redlining text	3	3	MUST	A																							
Redlining graphics	3	3	MUST	A																							
Delivery and distribution																											
Printed publication	1	5	MUST	A																							
Physical media	1	1	MUST	A																							
Network distribution	4	4	MUST	A																							
Diagnostics and prognostics																											
Diagnostics - User determined entry to data	1	1	NICE						X																		
Diagnostics - Software driven entry to data	2	2	NO																								
Dynamic diagnostics		5	NO																								
Wire/Fluid system tracing	4	4	NICE						X																		
System simulation	4	4	NO																								
Prognostics		5	NICE						X																		
External processes																											
Parts ordering	4	4	MUST											X													
Deficiency / Improvement report transmittal	3	3	NO																								
Maintenance data collection	3	3	NO																								
Operator debriefing	3	3	NO																								
Resource scheduling	3	3	NO																								
Knowledge management		5	NO																								
Other external application:	3	3	MUST											X													
Graphics																											
Pan, zoom, expand, magnify	1	1	MUST	A																							
Assembly/Disassembly	2	2	MUST											X													
Locator graphics	1	1	MUST											X													
3D modeling	4	4	MUST											X													
Linking																											
External references	2	2	MUST	A																							
Internal reference	1	1	MUST	A																							
Hot reference	2	2	MUST	A																							
Link to separate parts data	2	2	MUST	A																							
TOC, lists of figures, tables and photos	1	1	MUST	A																							
Hot spotting	3	3	MUST	A																							
Navigation and tracking																											
Next and previous	1	1	MUST	A																							
Return (Chronological)	1	1	MUST	A																							
History of traversed links	1	1	MUST	A																							
User creation of bookmarks	1	1	NICE	A																							
System/Subsystem navigation	3	3	MUST	A																							
Restore initial navigation view	1	1	NICE	A																							
Audit trail	2	2	NO																								
Graphical navigation	2	2	MUST	A																							
Dialog-driven interaction	3	3	NO																								
Voice-Activated commands	3	3	NO																								
Search - Full text	1	1	MUST	A																							
Search - User defined boolean	1	1	NO																								
Search - Across multiple databases/files	4	3	NO																								
Search - Context	2	2	MUST	A																							
Search - Key word	2	2	NICE	A																							
Filter content per applicability	2	1	MUST	A																							
Simultaneous display of multiple objects	2	2	MUST	A																							
Tear off window	2	2	NO																								
Printing																											
Print screen	1	1	NICE	A																							
Data module specific printing	1	2	NICE	A																							
Print linked data	2	2	NICE	A																							
Fully formatted/book version	4	5	MUST	A																							
Special content																											
Front Matter	1	1	MUST	A																							
Acknowledge warnings and cautions	1	1	NICE	A																							
Emergency procedures	2	2	NICE	A																							
Photos	1	1	MUST	A																							
Audio	2	2	NICE	A																							
Motion video	3	3	NICE	A																							
Animation	4	4	MUST	A																							
Content sensitive help (Tech data)	1	1	NICE	A																							
Context sensitive help (Viewer)	2	2	MUST	A																							
User training	3	3	NICE	A																							
Updates																											
Passive change indications and markings	1	1	MUST	A																							
Active change indications and markings	2	2	MUST	A																							
Full change	1	1	MUST	A																							
Block cycle and urgent changes	2	2	MUST	A																							
Near real time updates	2	2	NO																								
User operation mode																											
Web browser viewable	3	3	MUST	A																							
Stand alone mode	1	1	MUST	A																							
Network connectivity	3	3	MUST	A																							

Appendix D - Glossary/Definitions

S1000D Technical Publication Management Software suite: S1000D compliant Common Source DataBase (CSDB) with Content Management capabilities, XML Authoring tool, Technical Publication Publishing tool that uses CSDB contents, and S1000D compliant IETP viewer that all work together to comprise the S1000D Technical Publication Management Software Suite (here onwards referred to as The S1000D Software).

User: An individual authorized by the Client to use the Licensed Software under the Contract and for the purposes of these supplemental general conditions, includes any employee, agent or contractor authorized to use the Licensed Software (From Supplemental General Conditions 4003 (2010-08-16) Supplemental General Conditions – Licensed Software).

Author: User who uploads illustrations into the S1000D Technical Publication Management Software and, using the S1000D Technical Publication Management Software establishes the required linkages with SAP Objects and related part detail from DRMIS.

Viewer: User who selects components from assembly illustrations, BOMs and related part detail displayed in the S1000D Software and adds them directly into SAP Maintenance/Service orders in DRMIS.

Administrator: System updates, configuration, software development and user access. Anything that has to do with the setting-up and installation of the S1000D Software etc.

S1000D: S1000D is an international specification for the procurement and production of technical publications. It is an XML specification for preparing, managing, and using equipment maintenance and operations information. It was initially developed by the Aerospace and Defense Industries Association of Europe (ASD) for use with military aircraft. The specification has since been modified for use with land, sea, and commercial equipment. S1000D is part of the S-Series of ILS specifications. The S1000D standard is maintained by the Technical Publications Specification Maintenance Group (TPSMG), which includes members from ASD, the United States' Aerospace Industries Association (AIA), and the Air Transport Association (ATA), and industry and defense leaders from most of the countries using the standard.

Deployed server: In addition to the central instance, approximately twenty (20) deployed servers are deployed on ships to support the Navy and the ability to operate in a disconnected communications environment for an extended period of time (up to six (6) months). Each server is a separate instance of SAP and contains a subset of SAP data. DRMIS users on the ships are able to connect to the deployed server in order to conduct maintenance activities and search for parts. Once the ship is able to re-establish a connection to the central server, an internal SAP interface synchronizes the data between the central and deployed servers.

DND:	National Defence. The Department of National Defence and the Canadian Armed Forces (CAF) provide advice and support to the Minister of National Defence and implement government decisions regarding the defence of Canadian interests at home and abroad.
DITA:	The Darwin Information Typing Architecture or Document Information Typing Architecture is an XML data model for authoring and publishing. It is an open standard that is defined and maintained by the OASIS (Organization for the Advancement of Structured Information Standards) DITA Technical Committee.
DocBook:	DocBook is a general purpose XML and SGML document type particularly well suited to books and papers about computer hardware and software (though it is by no means limited to these applications).
SGML	Standard Generalized Markup Language, an international standard for defining methods of encoding electronic texts to describe layout, structure, syntax, etc., which can then be used for analysis or to display the text in any desired format.
XML	XML is a metalanguage which allows users to define their own customized markup languages, especially in order to display documents on the Internet.
Parts List	Unlike the Bill of Material (BOM), the parts list is a list of parts that can be ordered. The quantities per assembly are still exposed in the parts list. The parts list is a result from the Bill of Material explosion.
NCAGE	The NATO Commercial and Government Entity (NCAGE) Code is a five-character ID number used extensively within the federal government, assigned by the Department of Defense's Defense Logistics Agency (DLA). The NCAGE Code supports a variety of mechanized systems throughout the government and provides a standardized method of identifying a given legal entity at a specific location.
NSN	A NATO Stock Number (NSN) as it is known in the US, is a 13-digit numeric code, identifying all the 'standardized material items of supply' as they have been recognized by all NATO countries including United States Department of Defense. Pursuant to the NATO Standardization Agreements, the NSN has come to be used in all treaty countries. An item having an NSN is said to be "stock-listed".
MPN	MPN stands for Manufacturer Part Number. It is a unique number that is issued by manufacturers to identify individual products. Normally, the MPN of a product is a series of numbers and letters. You can see examples of MPNs on the barcodes of products as manufacturers print MPNs and the barcode.

Appendix E - Acronyms

ACL	Access Control List
AGP	Agreement on Government Procurement
AIA	Aerospace Industries Association of United States
AIT	Agreement on Internal Trade
ALSS	Automated Land Scaling System
API	Application Programming Interface
ASD	Aerospace and Defense Industries Association of Europe
ATA	Air Transport Association
BAPI	Business Application Programming Interface
BOM	Bill of Material
BREX	Business Rule EXchange
CAD	Computer Aided Design
CCFTA	Canada-Chile Free Trade Agreement
CColFTA	Canada-Columbia Free Trade Agreement
CISD	Canadian Industrial Security Directorate
COTS	Commercial Off The Shelf
CPanFTA	Canada-Panama Free Trade Agreement
CPFTA	Canada-Peru Free Trade Agreement
CSDB	Common Source DataBase
DFPS	Defence Forces & Public Security SAP Industry Solution (SAP)
DIR	Document Information Record (SAP)
DITA	Darwin Information Typing Architecture
DM	Data Module
DMC	Data Module Code
DMS	Document Management System (SAP)
DRMIS	Defence Resource Management Information System
DWAN	Defence Wide Area Network
ECC	SAP ERP Central Component
EIF	Equipment Item File
EMR	Equipment Master Record (SAP)
ERP	Enterprise Resource Planning (SAP)
ESL	Equipment Support List
ETL	Extract, Transform and Load
FCP	Federal Contractors Program
FFFC	Form-Fit-Function Class
FLOC	Functional Location (SAP)
FPS	Former Public Servant
GC	Government of Canada
GOC	Government Of Canada
GUI	Graphical User Interface
IETP	Interactive Electronic Technical Publication
IPC	Illustrated Parts Catalogue
ITAR	International Traffic in Arms Regulations
MDS	Mobile Defense and Security (SAP)
MS	MicroSoft
MM	Materials Management Module (SAP)
MMR	Material Master Record (SAP)
MPN	Manufacturing Part Number
NAFTA	North American Free Trade Agreement

NATO	North Atlantic Treaty Organization
NCAGE	NATO Commercial and Governmental Entity
NSN	NATO Stock Number
OASIS	Organization for the Advancement of Structured Information Standards
PM	Plant Maintenance Module (SAP)
PM	Publication Module
PoP	Proof of Proposal
PWGSC	Public Works and Government Services Canada
RFC	Remote Function Call
RFI	Request For Information
RFP	Request For Proposal
SDK	Software Development Kit
SGML	Standard Generalized Markup Language
TBP	Total Bid Price
TES	Total Evaluation Score
The S1000D software	The S1000D Technical Publication Management Software Suite
TPSMG	Technical Publications Specification Maintenance Group
UIS	User Interface Simplification
WTO	World Trade Organization
WYSIWYG	What You See Is What You Get
XML	eXtensible Markup Language

Annex B:
Questions to Industry

Overall

Q1. Please provide feedback on the requirements in the draft Statement of Requirements (SOR).

Q2. Could you provide a look and feel demonstration of your S1000D Technical Publication Management Software Suite?

Content Management / Mobility

Q3. Explain how you can distribute publications and their changes to various networks and mobile devices. Please elaborate on how the network bandwidth usage is optimized when distributing changes to publications.

Q4. Could your CSDB application be used as a content management system for both structured and non-structured content? Is this something that you would recommend?

Q5. Could the publications published from the CSDB be stored in an external Content Management System? Is this something that is recommended?

SAP Integration

Q6. Have you ever integrated your S1000D software with SAP?

Q7. Describe the mechanism that your software has leveraged within SAP to open the specific publication that is the focus of the technical object in a SAP work order.

Q8. How does the S1000D software integrate with the following SAP modules?

a. SAP Plant Maintenance (PM)
b. SAP Material Management (MM)
c. SAP Document Management System (DMS)

Q9. Describe the technology and methodology that would be used to achieve the integration with SAP (e.g. configuration, customization, etc.). Could these configurations or customizations be performed by DND resources or DND contracted resources?

Q10. Does your IETP Viewer have the capability to dynamically fetch data from SAP and expose the data within the publication?

Technical Architecture

Q11. Could the publications and associated files be stored in a Windows File Server or is a different vault required?

Q12. How does your solution optimize demands on network bandwidth for opening publications? Is there streaming and/or compression technology available?

Q13. Describe how the S1000D software works in the following modes within a Non-Cloud deployment and possibly in a cloud deployment:

a. On-Line with SAP connectivity (i.e. has connectivity to the network and connected to SAP);
b. On-Line without SAP connectivity (i.e. has connectivity to the network but not connected to SAP); and
c. Disconnected (i.e. stand-alone laptop with no connectivity to any network and no connectivity to SAP).

Q14. Describe the hardware and software requirements for your non-cloud solution including:

a. Number of servers (virtual or physical) with number of CPUs and the RAM requirements;
b. Operating system with version information; and
c. Storage requirements.

Security and Authorization

Q15. How does the S1000D software provide authorization control to view, edit and publish publications by user id, including the potential for anonymous / guest access for the viewer tool?

Q16. Does the S1000D software allow single-sign-on functionality? If yes, describe how this would be achieved.

Q17. Please describe in detail, the security features available in your S1000D software suite. Could you describe the security architecture including the technology used?

General

Q18. How does your S1000D software integrate with other S-series specifications (e.g. S2000M, S3000L, etc.)?

Q19. Could your publishing engine publish IETPs in IETP-X format so that the publication can be viewed using a different viewer?

Q20. Are you the manufacturer of all three components of the S1000D software suite or does your software suite include components manufactured by other vendors? Please explain how the XML authoring tool will be integrated out-of-the-box.

Q21. Could your S1000D viewer display non-S1000D publications? Please provide examples.

Proof of Performance approach

Q22. A proof of performance demonstration will be requested as part of a future RFP to ensure successful integration within DND's technical environment (as described in Appendix B to the Draft SOR) and concept of operations. Respondents are requested to provide feedback on this approach and suggest approaches to allow DND to adequately evaluate a proposed S1000D software suite in the DND technical environment.

a. Integration with DND's technical environment excluding SAP.
b. Integration with DND's technical environment including SAP.

Q23. At DND we have a concern with the performance of the software. Because it is hard to evaluate how fast a software responds to commands by the user and indeed how fast publications can be opened, could you please provide suggestions as to how DND could evaluate the performance (Speed) of the solution?

Professional Services

Q24. Describe the services you provide to help load legacy publication data into the CSDB as S1000D objects.

Q25. Please provide an estimated level of effort required by DND to execute the SAP integration:

Resource Category	**Phase 0.5 (No Integration with SAP but all other S1000D Software requirements described in the DRAFT SOR are included in this phase) – estimated # of resources (in FTEs)**	**Phase 1.0 (Integration with SAP) – estimated # of resources (in FTEs)**
Project Manager		
Solution Architect		
Programmer/Analyst – Functional		
Programmer/Analyst – Developer		
Tester		
Others (please specify)		

Financial

Q26. What is your pricing model (by user, CPU, enterprise, etc.) for the Common Source Database (CSDB), Publisher, and Viewer and if required, the XML authoring tool?

Q27. For budgetary purposes, please provide in the table below, the expected cost of an S1000D software that at a minimum meets the mandatory requirements mentioned in the SOR.

Topic	Minimum Mandatory Requirements	Expected cost in CAD
Software Acquisition	S1000D Technical Publication Management Software Suite	
Implementation – Phase 0.5	Software procurement and integration with DND technical environment (Excluding SAP) – Excluding custom development	
Optional Implementation – Phase 1.0	Software procurement and integration with DND technical environment (Including SAP) – Excluding custom development	
Custom development for Phase 0.5	Coding required to enhance the standard functionality to meet the minimum mandatory requirements	
Optional Custom development for Phase 1.0	Coding required to enhance the standard functionality to meet the minimum mandatory requirements	
Data Conversion of existing legacy publications to be converted to CSDB objects	There are approximately 700 existing legacy publications that are to be converted to CSDB objects.	
Licensing – CSDB (Authoring tool) – One time and Ongoing	Production Environment: • 20 CSDB authoring licenses. • 20 XML authoring licenses Quality Assurance Environment: • 5 CSDB authoring licenses. • 5 XML authoring licenses Development Environment: • 5 CSDB authoring licenses. • 5 XML authoring licenses	

	Training Environment: • 5 CSDB authoring licenses. • 5 XML authoring licenses	
Licensing – Publishing tool – One time and Ongoing	Production Environment: • 20 Publishing tool licenses Quality Assurance Environment: • 5 Publishing tool licenses Development Environment: • 5 Publishing tool licenses Training Environment: • 5 Publishing tool licenses	
Licensing – Viewing tool – One time and Ongoing	Production Environment: • 7000 Viewer Licenses Quality Assurance Environment: • 5 Viewer Licenses Development Environment: • 5 Viewer Licenses Training Environment: • 5 Viewer Licenses	
Training – Train-The-Trainer approach	5 trainers to be trained	
Training – On-site, in-class	20 users	
Training – Web based	Per user or enterprise wide	
Annual Maintenance and Support		
Engineering and Maintenance In Service Support (ISS) per diems		

Conclusion

Q28. Is there anything else that you would like to add or are there any questions that we forgot to ask?