S1000D User Forum 2010
September 27-30, 2010, Aerostar hotel, Moscow, Russia
Track1: ILS implementation and experience

S2000M - Overview

by
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Cassidian Air Systems, Customer Support
(on behalf of the S2000M MCG Industry co-chair Karl-Heinz Haerdtl)
Content

1. Aim and structure of S2000M
2. S2000M within the ILS concept
3. What's next
• S2000M defines the Materiel Management processes and procedures to be used in support of any military product
  – Although this specification is designed for military product support, it may nevertheless be used for the support of any non-military product

• S2000M describes the business relationship between Industry and Customer by providing the process flow, the relevant transactions and data elements used for the Materiel Management
S2000M is organized into basic chapters:

- Chapter 1: Provisioning - General
- Chapter 2: Pricing
- Chapter 3: Order Administration
- Chapter 4: Invoicing
- ...
S2000M Materiel Management

S2000M Information Flow

**INPUT**

- vendor input
- PDM/bill of material drawings
- LORA/maint.concept

**PROCESS**

1. **Materiel Planning**
   - (Ch 1 - MP)

2. **Procurement Planning**
   - (Ch 2 - PP)

3. **Order Administration**
   - Delivery
   - (Ch 3 - OA)

4. **Invoicing**
   - (Ch 4 - INV)

**OUTPUT**

- IPL (breakdown structure in disassembly order / valid parts)
- Price Lists Quotations Price conditions
- Delivery
- Invoice / Payment

**FLOW CHART**

<table>
<thead>
<tr>
<th>INPUT</th>
<th>PROCESS</th>
<th>OUTPUT</th>
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<tr>
<td>vendor input</td>
<td>Materiel Planning</td>
<td>IPL (breakdown structure in disassembly order / valid parts)</td>
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<tr>
<td>PDM/bill of material drawings</td>
<td>Procurement Planning</td>
<td>Price Lists Quotations Price conditions</td>
</tr>
<tr>
<td>LORA/maint.concept</td>
<td>Order Administration</td>
<td>Delivery</td>
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<tr>
<td>IPL (recommended spare parts)</td>
<td>Invoicing</td>
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Chapter 1: (MP) Provisioning - General

Provisioning is the process of selecting spares and support items, necessary for the support of any military product.

- The normal method of compiling data will be to present an engineering breakdown in disassembly sequence, identifying all assemblies and their individual components together with other detail parts which cannot be assigned to assemblies, in accordance with their engineering drawings and Bills of Material (BOM). The sequencing of these items will be by use of the Catalogue Sequence Number (CSN) and it is this practice which enables the production of the Illustrated Parts Catalog (IPC) from the same data.

- The engineering breakdown will be to the level which matches the Customer’s maintenance plans.

- In addition to the engineering breakdown, the following will also be listed:
  - Raw materials
  - Consumables
  - Repair kits
  - Support equipment, tools and test equipment
  - Shipment/Storage parts
  - Category 1 (special-to-type) containers.
• **Chapter 1: (MP) Provisioning - General (2)**

  - This chapter defines how to generate and provide the provisioning information to the Customer.
  - It also provides the data base from which Illustrated Parts Catalogues (IPC) or Illustrated Parts Data Publications (IPDP) are produced → S1000D.
  - The **Codification** processes and information are covered for data exchange between Industry, the National Codification Bureau (NCB) and the Customer.
  - The **data updating** procedure is covered.
• **Chapter 1: (MP) Provisioning - General (3)**

The transmissions used for this chapter are:

– CSNIPD - CSN-orientated IP data
– PNOIPD - PN-orientated IP data
– UPIPCO/UPIPCT - Updating of IP data
– CORIPD - Correction of IP data
– RESIPD – Restatement of IP data
– OBSINF – Observations
– CODREQ – Codification request
Chapter 2, 3 and 4 are providing the features for material supply

- **Chapter 2: (PP) Pricing**

  This chapter defines methods for Industry to provide pricing information on parts to the Customer
  - via Price list
  - via a quotation process
  - via order based pricing
  - also national pricing regulations are covered (provisional prices / fixed prices)
Chapter 3: (OA) Order Administration

Order Administration covers the process of order placement, and the flow of information concerning the progress of orders and deliveries

- Order placement
  - for spares, support equipment, mod sets, repair or other services
- Order response
  (acceptance / rejection)
- Order change
  (by Customer or Contractor)
- Change response
- Delivery information
- Delivery response
- Hastening
• **Chapter 4: (INV) Invoicing**
  Invoicing provides a standard process of transmitting invoice data and invoice status between Contractor and Customer

• National pricing regulations require
  – Provisional invoicing
  – Final invoicing
  – Invoice adjustment

• Invoice types for
  – claim for payment
  – for validation only
  – summary invoice claim
Integration of S2000M in the ILS concept

Product Life Cycle

Definition

Design

Development

Modification

Modification

Production

Service

End of Life

LSA

Mat. Mgmt.

S2000M

IP

OA

Tech. Pub.

Data Feedback

S1000D

S5000F
Integration of S2000M in the ILS concept (cont.)
S2000M - Overview

Integration of S2000M into the ILS Concept (cont.)

S1000D

Operational & Maintenance Data Feedback

S5000F

S3000L

S4000M

S2000M

Design of Systems and Support Equipment

Equipment Identification
Design Data

Logistic Support
Analysis activities

Provisioning

Maintenance Task Description
MTBF
LCN (ILSN))

part number with
MFC, NSN, PLT,
UOI, UOM, QUI ...
and validity/service

parts information
-prices /price conf.
-leadtime
-obsolescence inf.

part, NSN, SMR
(iaw S1000D def.)

Technical Documentation

IETM, other media

Logs Mat and Data

IN
SERVICE
USE

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S2000M - Overview
Integration of S2000M in the ILS concept (cont.)

**S2000M Materiel Management**

S2000M internal process

S2000M

S1000D

S3000L

S4000M

S5000F

Design of Systems and Support Equipment

Equipment Identification

LSA data

Design Data

LSA tasks/data

PROVISIONING

Order Administration

Technical Documentation

IETM, other media

SERVICE

USE

Operational & Maintenance Data Feedback

OPS Data

Provisioning Data

IP Data Subsets

S2000M

DEXs i.a.w. PLCS to be defined

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Next S2000M steps regarding ILS integration

- The S2000M PLCS Task Team (PLCSTT) already met three times this year in order to
  - get harmonization between S1000D, S2000M and S3000L in terms of integrated data modeling using UML
  - create PLCS DEXes required to exchange data from/to S2000M - S3000L - S2000M, probably by extending DEX1 (A&D) and DEX3 (A&D) as developed by the S1000D Maintenance Task Data Task Team (MTDTT)
    (for S2000M - S1000D probably a new DEX is required to support the generation of S1000D IPD data modules)
• PLCSTT status
  – Modeling of initial delivery of provisioning data completed

  Continue with
  – Modeling of provisioning data update and header information
  – Creation of S3000L to S2000M data matrix and business rules
    (revise Chapter 18 of S3000L)
  – Creation of DEXes
    • Provisioning DEX
    • Extension of DEX1 (A&D) and DEX3 (A&D)
  – Investigation of using commercial spec (BOOST Aero) for
    material supply
  – Testing of DEXes

• Next meeting: November 2010; More meetings necessary in 2011
Way ahead

  – 2nd ILS-Council (Nov. 2010) is to organize nomination of Steering Committee (SC) members by ASD and AIA
  – S2000M MCG will continue to prepare S2000M issue 5.0 (1st Q 2011)
  – S2000M MCG (ASD) will convert into S2000M SC (ASD + AIA) after 5.0 is issued

• PLCS
  – PLCSTT will continue with PLCS harmonization independent of the S2000M SC setup schedule
  – S2000M “PLCS version” will be published as issue 6.0 (probably not before 2012)
  – From issue 6.0 onwards one common S2000M version will be maintained (no separate traditional and PLCS versions)
Abbreviations

A&D    Aerospace & Defence
AIA    Aerospace Industries Association of America
ASD    AeroSpace and Defence Industries Association of Europe
CSN    Catalog Sequence Number
DEX    Data EXchange specification
DM     Data Module
DMC    Data Module Code
GIPD   Generic IPD
ILS    Integrated Logistic Support
ILSN   Integrated Logistic Support Number
INV    Invoice
IPC    Illustrated Parts Catalog
IPD    Illustrated Parts Data
IPDP   Illustrated Parts Data Publication
IPL    Initial Provisioning List
IPPN   Initial Provisioning Project Number
## Abbreviations (2)

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<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<td>ISN</td>
<td>Item Sequence Number</td>
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<td>LCN</td>
<td>Logistic Control Number</td>
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<tr>
<td>LORA</td>
<td>Level Of Repair Analysis</td>
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<td>MCG</td>
<td>Maintenance Coordination Group</td>
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<td>MFC</td>
<td>ManuFacturer Code</td>
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<td>MP</td>
<td>Material Planning</td>
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<td>MTBF</td>
<td>Mean Time Between Failures</td>
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<td>NSN</td>
<td>NATO Stock Number</td>
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### Abbreviations (3)

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<td>Quantity per Unit of Issue</td>
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<td>Steering Committee</td>
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<td>SMR</td>
<td>Source Maintenance Recoverability</td>
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<td>SNS</td>
<td>Standard Numbering System</td>
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<td>Task Team</td>
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<td>UML</td>
<td>Unified Modeling Language</td>
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<td>UOI</td>
<td>Unit Of Issue</td>
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<tr>
<td>UOM</td>
<td>Unit Of Measure</td>
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Thank you for your attention!

Questions?

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Backup information
S2000M Materiel Management

IPL sequence

- Initiation codification
- Codification results
- Formal IPL
- Start IPD production
- Start updating
- S1000D

- MC - Maintenance Concept
- VDI - Vendor Data Input
- PAM - Pre-Assessment Meeting
- LOD - Last Order Date
- ISD - In Service Date
- LSD - Logistic Support Date

2 months is the minimum time according to S2000M

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Chapter 1 Messages

Section 1A-7 presents the structure and format of the messages, which have been produced. The following formats will be used:

- Transmission of provisioning data from Contractor to Customer
  - CSNIPD - CSN-orientated IP data
  - PNOIPD - PN-orientated IP data
  - UPIPCO - Category 1 Updating of IP data
  - UPIPCT - Category 2 Updating of IP data
  - UPIPPN - Updating of PN-orientated IP data
  - CORIPD - Correction of IP data
  - RESTIP - Restatement of IP data (introduced with issue 4.0)

- Transmission of Observations and Customer provided data
  - OBSINF

- Transmission of Codification requests from Contractor to Home NCB
  - CODREQ
CSNIPD structure

**IPH**
- IPP
- MTP
- ISS
- TOD
- ADD
- FID
- MOI
- DRS
- DRD
- LGE
- IPS
- DRR

**VAS**
- CHG
- SID
- SNS

**OHS**
- OSN
- OBS

**CAS**
- CHG
- CSN
- ISN
- IND
- RFS
- QNA
- TQL
- PNR
- MFC
- NSN

**CBS**
- ASP
- NIL
- RTX
- SMF
- MFM
- DFL

**CCS**
- UCE
- UCA
- ICY

**CDS**
- CTL
- ESC
- MAP
- CSR

**CES**
- CHG
- SRV
- SMR
- RMQ
- ROQ
- CJS
- CHG
- MOV
- CKS
- CHG
- EFY

**CFS**
- CHG
- RFD

**CIS**
- CHG
- ILS

**IPH - Header Segment**
- Identification of the IP Project

**VAS - Segment**
- Extension of IPH-segment, identifies the different variants

**OHS - Segment**
- Free text

**CAS - Segment**
- Association to the part-related data in the PAS-segment
- Mandatory location-related data
- Identification of the part applicable to the Location

**CBS, CCS, CDS, CFS - Segment**
- Conditional - to be provided as requires by the item

**CES - Segment**
- Mandatory, Service and SMR code

**CJS - Segment**
- Mandatory associated with CES-segment
- Identifies Aircraft or Engine Model Versions

**CKS - Segment**
- Indicates the Effectivity

**CIS - Segment**
- Indicates the Integrated Logistic Support Number
CSNIPD structure (cont.)

PAS – Segment
Identifies the Part-related Data
The PAS-Segment and associated segments are to be provided once for each PN in the Project

PBS, PCS, PDS, PES, PFS – Segment
Conditional - to be provided by the item
PBS - Segment contains mandatory data for recommended spares
PES - Segment contains data for repairable

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<th>CHG</th>
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Chapter 2 - Pricing

... takes care about national pricing regulations and NPA price approval processes

Price types:
- Indicative
- Provisional
- Maximum
- Fix
- ...

Price transmissions:
- Price lists
- RFQ – Quotation
- Order based price

Price validity:
- Date of order
- Date of CDD
- Date of delivery

Price category:
- Order price
- Price break
- MSQ price
- ...

... takes care about national pricing regulations and NPA price approval processes
Chapter 3 - Order administration

Provisioning category:

- Initial provisioning
- Reprovisioning
- Spare
- Repair *
- AGE
- ModSet
- Other service
- Special order
- Routine order
- Expedite order
- ….  

Transaction types:

- Order placement
- Order response (acceptance / rejection)
- Order change (CUS/CON – QTY – FDD – PTY – UCD …)
- Change response
- Delivery information
- Delivery response
- Hastening

* Repair within Chapter 3 (2 and 4) or i.a.w. Chapter 5
Chapter 4 - Invoicing

… considers impact of Chapter 2
(national pricing regulations)

Invoicing category:
- Final invoicing
- Provisional invoicing
- Invoice adjustment

Transaction types:
- Invoice
  - for payment
  - for validation only
- Summary invoice
- Payment advice