# THE
# SHIPDEX™ PROTOCOL

The International Business Rules to standardize the development and the exchange of technical and logistic data within the shipping community

## INTRODUCTION

## SHIPDEX™ COPYRIGHTS
### General

Shipdex™ is a trade mark owned by the following companies (the **Copyright Holders**):

| | |
|---|---|
| GRIMALDI GROUP | Grimaldi Group s.p.a |
| MSM | MASTERMIND Shipmanagement |



Shipdex is a non-profit organisation whose scope is to develop, maintain and promote The Shipdex™ Protocol to standardize electronic exchange of the technical data among shipping industry.

Shipdex™ Protocol is available to all upon registration (on www.shipdex.com) as member of Shipdex™ community.

The first registration fee will allow being a member of Shipdex™ community and to receive a Company entitled, controlled and numbered copy of "Shipdex™ Protocol specification" together with the Agreement for use of Shipdex™ Protocol that will allow using it under Copyright rules.

The first registration fee will allow also:

- To participate free of charge, subject to reservation, to seminars and conferences (compatible with allowed places due to the fixed number of participants) organised by Shipdex™ organisation;
- To download updated copies of "Shipdex™ Protocol specification" in consequences of changes, modifications, implementation and maintenance in general performed by the SPMG (Shipdex™ Protocol Maintenance Group);
- To download additional Shipdex technical documents like updated Shipdex Standard Tables (SST), etc;

- To download the powerful Shipdex Viewer to navigate through Shipdex data and print Shipdex data "on demand";
- To propose changes, modifications, implementation and maintenance in general of the protocol to SPMG (Shipdex™ Protocol Maintenance Group) using the Shipdex web site (www.shipdex.com) in the "Registered Member Area" (RMA) accessible by Login and Password;
- To be inserted in the published list of Registered Members for Shipdex™ community;
- To have one year subscription.

Annual subscription fee will allow:

- To renew Agreement for use of Shipdex™ Protocol;
- To propose changes, modifications, implementation and maintenance in general of the protocol to SPMG (Shipdex™ Protocol Maintenance Group) using the Shipdex web site (www.shipdex.com) in the "Registered Member Area" (RMA) accessible by Login and Password;
- To download updated copies of "Shipdex™ Protocol specification" in consequences of changes, modifications, implementation and maintenance in general performed by the SPMG (Shipdex™ Protocol Maintenance Group);
- To download updated versions of the powerful Shipdex Viewer to navigate through Shipdex data and print Shipdex data "on demand";
- To download additional Shipdex technical documents like updated Shipdex Standard Tables (SST), etc.

Subscription fees will also contribute to maintaining the Shipdex™ website and to promoting and advertising the Shipdex™ Protocol within the shipping industry as far as to maintain contacts and exchanges with other industries Technical Data Standardisation Associations like ASD, ATA, ISO, IMO etc.

## The Shipdex organization

The "**Shipdex Executive Members**" Group has been created and it is composed by some of the members which have been original Founder Members or Members that have contributed actively to the design, construction and diffusion of the Shipdex™ protocol.
The Shipdex organization developed a Set of Business and Writing Rules called **Shipdex™ Protocol** as an implementation for the shipping community of the **S1000D™** specification.

*The S1000D is the "International specification for technical publications using a common source database". Since its inceptions over 25 years ago, S1000D has grown to where it is now used widely around the world.*
*S1000D is developed and maintained by an international community of business and technical experts from civil and defence aviation, as well as from the defence and land and sea industries. Customers, suppliers and solution providers are represented.*

*The three sponsoring organizations of S1000D are:*
- *Aerospace and Defence Association of Europe (ASD)*
- *Aerospace Industry Association (AIA)*
- *Air Transport Association (ATA) e-Business Program*

The **Shipdex Executive Members** are listed here below.

| | |
|---|---|
| G&C Shipping | G&C Shipping |
| MAN Energy Solutions | MAN Energy Solutions |
| MASTERMIND | MASTERMIND Shipmanagement (*Chairman*) |
| Rolls-Royce | Rolls-Royce Marine (Kongsberg Maritime) |

| | |
|---|---|
| Shipdex CONSULTING | Shipdex Consulting (*Technical Manager*) |
| WIN GD Winterthur Gas & Diesel | Winterthur Gas & Diesel |
| YANMAR | Yanmar |

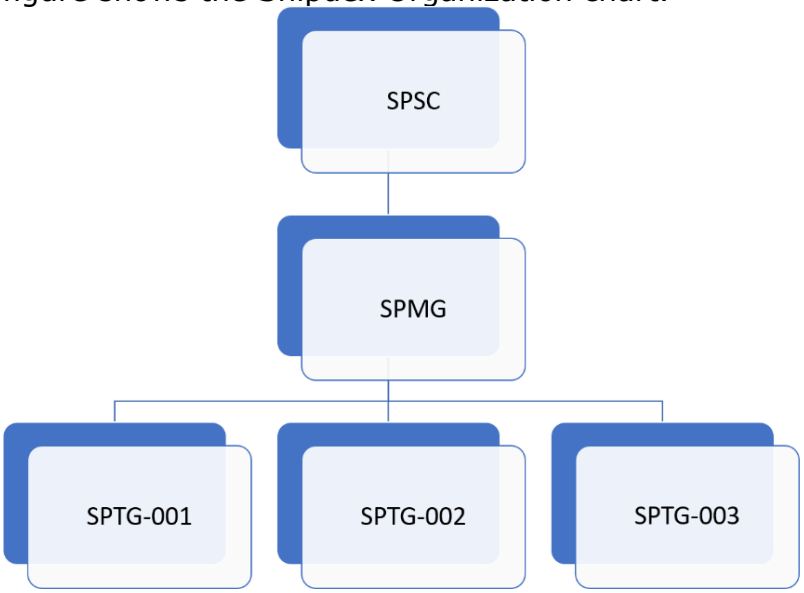
The Executive Members have set up the **Shipdex Protocol Steering Committee** (**SPSC**) composed of a representative of each Executive Member. The SPSC is in charge to govern the Shipdex organization.

In order to comply with its engagements the SPSC is assisted by **Shipdex Protocol Maintenance Group** (**SPMG**) composed, at least, by a representative of each Executive Member plus "joined members" selected by SPSC.

The SPMG is in charge to maintain and update the Shipdex Protocol.

In order to comply with its engagements the SPMG can be assisted by specific Shipdex Protocol Task Groups (SPTG-xxx) composed, on a volunteer base, by representatives of SPSC and SPMG.

The following figure shows the Shipdex Organization chart.




Shipdex Organization chart

All correspondence and queries about Shipdex™ should be directed to:

**Mastermind Shipmanagement**
k.a. capt. Eugen Adami (*Shipdex Chairman*)
eadami@mastermind-cyprus.com

**SHIPDEX CONSULTING Ltd.**
k.a. Marco Vatteroni (*Shipdex technical manager*)
mv@shipdexconsulting.com

# 1. Special usage rights

**Agreement for use of SHIPDEX™ Protocol**

By using all or any portion of SHIPDEX™ Protocol you accept the terms and conditions of this User Agreement. This User Agreement is enforceable against you and any legal entity that has obtained SHIPDEX™ Protocol or any portion thereof and on whose behalf it is used. As long as you comply with the terms of this User Agreement, the Copyright Holders grant to you a nonexclusive license to use SHIPDEX™ Protocol. SHIPDEX™ Protocol is the intellectual property of and is owned by the Copyright Holders. Except as expressly stated herein, this User Agreement does not grant you any intellectual property right in the SHIPDEX™ Protocol and all rights not expressly granted are reserved by the Copyright Holders. You shall not modify, adapt or translate, in whole or in part SHIPDEX™ Protocol. SHIPDEX™ Protocol is being delivered to you "as is".

The Copyright Holders do not warrant the performance or result you may obtain by using SHIPDEX™ Protocol. The Copyright Holders make no warranties, representations or indemnities, express or implied, whether by statute, common law, custom, usage or otherwise as to any matter including without limitation merchantability, integration, satisfactory quality, fitness for any particular purpose, or non-infringement of third parties rights. In no event will the Copyright Holders be liable to you for any damages, claims or costs whatsoever or any consequential, indirect or incidental damages, or any lost profits or lost savings or for any claim by a third party, even if the Copyright Holders have been advised of the possibility of such damages, claims, costs, lost profits or lost savings. You agree to defend, indemnify, and hold harmless the Copyright Holders and its parents and affiliates and all of their employees, agents, directors, officers, proprietors, partners, representatives, shareholders, servants, attorneys, predecessors, successors, assigns, and those who have worked on the preparation, publication or distribution of the SHIPDEX™ Protocol from and against any and all claims, proceedings, damages, injuries, liabilities, losses, costs, and expenses (including reasonable attorneys' fees and litigation expenses), relating to or arising from your use of SHIPDEX™ Protocol or any breach by you of this User Agreement. This User Agreement will be governed by and construed in accordance with the laws of the United Kingdom. Any dispute, controversy or claim arising out of or in connection with this User Agreement, or the breach, termination or invalidity thereof shall be finally settled by arbitration in accordance with the Rules of the Arbitration Institute of the International Chamber of Commerce. The arbitral tribunal shall be composed of a sole arbitrator. The place of arbitration shall be London. The language to be used in the arbitral proceedings shall be English. If the dispute, inclusive of any counterclaims, claims for set-off and interest should comprise of an amount less than € 20,000.00 (Euro twenty thousand/00), exclusive of VAT, the Rules for Expedited Arbitrations of the Arbitration Institute of the International Chamber of Commerce shall be applied.

# 2. INTRODUCTION TO THE PROTOCOL

## *2.1. Purpose*

The Shipdex™ Protocol (www.shipdex.com) is the International Business Rules developed to standardize the development and the exchange of technical and logistic data within the shipping community.

The Shipdex™ Protocol applies to the S1000D™ (www.s1000D.org) at issue 2.3. S1000D™ is a trademark of Aerospace and Defence Industries Association of Europe. Terms of Use regarding to S1000D™ are strictly observed by Shipdex Protocol.

The Shipdex™ Protocol stands for Business Rules and Technical Specifications to assure a high quality of technical and logistics data and the data exchange between Ship-owners, Shipyards, Manufacturers, Classification Societies, IT companies and Service Providers.

The scope of Shipdex Protocol is to replace the traditional technical manuals (supplied today on paper or in various electronic formats) with advanced, electronic and standardized Technical Publications.

The reason to develop a common and standardized Protocol for exchanging data resides on the fact that shipping companies are receiving from manufacturers technical manuals in different formats, different structures and different data quality.
This situation created several troubles to end users in terms of information comprehension and electronic usage.
For instance, end users need to store paper manuals in dedicated rooms or are obliged to use different viewers (or browsers) to visualise electronic manuals supplied in HTML, WORD, XML or PDF formats.
Moreover, since most shipping companies are utilizing *Computerized Maintenance Management Systems* (CMMS) and *Enterprise Resource Planning* (ERP) software applications to manage and optimize maintenance and material purchase processes, a standard data exchange protocol allowing databases automatic generation was deemed necessary.
Therefore the Shipdex™ protocol is dealing with technical information and the technical manuals must be considered just as one of the possible output from a Shipdex™ dataset.

On 27-28 march 2007 a meeting was held to confirm the will to develop a common and shared Data Exchange Protocol whose name was decided to be Shipdex™.
All the above mentioned companies (the Founder Members) agreed to develop the "Shipdex™ Data Exchange Protocol" (hereafter known as The Shipdex™ Protocol).

## *2.2. Scope*

Shipdex™ Protocol covers technical data exchange in any sea projects.
This means that Shipdex Protocol is open to any company/organization which wishes to use it, just registering at www.shipdex.com.

Shipdex™ Protocol applies to the S1000D™ issue 2.3 "International Specification for technical publication utilizing a common source database" to exchange data in a neutral and standardized format. This means that it can be implemented by anyone on different Information Technology systems.
This feature, along with the concept of modularization, makes Shipdex™ Protocol acceptable to the international shipping community.

Information produced in accordance with Shipdex™ Protocol is achieved in a modular form, called "Data Module", which is defined as "the smallest self-contained information unit within a **Shipdex™ dataset**".
Shipdex™ Protocol defines Data Modules as containers for data exchange.

The **Shipdex dataset** is the collection of all the information (data modules, information objects and external documents) related to a given product in a given configuration.

A Data Module contains the following kind of information:

- An *identification and status section* with all identification and quality assurance information
- A *content section*, which is different, depending on the Data Module type.

The Data Module types that Shipdex™ Protocol makes use are:

- Descriptive and operational
- Procedural
- Illustrated parts data (IPD)
- Troubleshooting
- Maintenance Planning
- Publication
- Comment
- SCO content
- Learning
- SCO Content Package Module (SCPM)

The above Data Module types are governed by the following S1000D™ **issue 2.3** xml schemas:

- Descript.xsd (Descriptive, operational and troubleshooting)
- Proced.xsd (procedural)
- ipd.xsd (Illustrated parts data)
- schedule.xsd (Maintenance Planning)
- pm.xsd (Publication)
- comment.xsd (Comment)

and by the following S1000D **issue 4.2** xml schemas:

- scocontent.xsd (SCO content)
- learning.xsd (Learning)
- scormcontentpackage.xsd (SCO Content Package Module)
- lom.xsd (to be used to validate SCPM data modules)

available for a free download on www.s1000d.org

All Data Modules that are applicable to different Products may be gathered and managed in a database, which is hereafter referred to as the Common Source Data Base (CSDB).

Information is not duplicated in the CSDB though individual Data Modules can be used many times in the output. Savings are therefore made in the maintenance of the data in that it only needs to be changed once, whilst the changed information appears throughout the outputs.

## 2.3. *Basic definitions*

- The Product: any platform, system or equipment (civil or military sea vehicle, equipment or facility).
- The Project: the task to exchange data related to the Product for a given Contract.
- The Dataset: the collection of all information in Shipdex format related to a given product configuration
- The Common Source DataBase (CSDB): the "place" where all the Shipdex data must reside to be produced and managed under quality and configuration control

## 2.4. *How to use the Shipdex™ Protocol specification*

This specification is designed to cover technical data exchange in support of any platform, system or equipment project (civil or military sea vehicle, equipment or facility) known as "the Product".

All aspects of technical data exchange are described.

| Chapter | Title | Description |
|---|---|---|
| Chap 1 | Introduction to the Protocol | History and scope of the Protocol |
| Chap 2 | Documentation process | Overview of the documentation process and relation with other specifications |
| Chap 3 | Information generation | General rules which apply to information that are produced on the basis of Data Modules |
| Chap 4 | Information management | Data Module structure and rules for interchange and updating of Data Modules |
| Chap 5 | Shipdex™ Standard Tables | Definition of all Shipdex™ standard tables and examples of codes |
| Chap 6 | Writing Rules | Definitions and guidance on using the XML to create Data Modules. |

Chap 1 - Introduction to the Protocol
This chapter provides general information about the Protocol. The scope of the Protocol, how to use it, how to tailor it and the way to address change request are explained.

Chap 2 - Documentation process
This chapter explains the generic documentation process. It provides an overview of the documentation process including the use of information technology and the relation to other processes and specifications.

Chap 3 - Information generation

This chapter provides general rules which apply to data to be exchanged and that are produced on the basis of Data Modules concepts. This is primarily in support of authors.

All Data Modules have a basic structure which is defined in Para 3.2.

Information Sets are used to establish the required scope of the information and Data Module coding strategy. The use of these Information Sets is fully defined in Para 3.3.

The issues surrounding the updating of Data Modules are explained in Para 3.4.

During the development and update of Data Modules, quality assurance procedures are required to ensure that the contents of the Data Modules are adequate and technically accurate. Details of these procedures are given in Para 3.4.

All Data Modules are produced in accordance with structural rules. Writing Rules for writing and illustrations, together with warnings, cautions and notes, reinforces these structural rules which are supported by specific guidance for authoring Data Modules. These rules are described in detail on Chapter 6.

More information may be found on S1000D issue 2.3 (available on www.s1000d.org).

Chap 4 - Information management

Information Management comprises the addressing, storage and handling of Data Modules and their associated information objects (illustrations or multimedia files) and external documents to enable the production and exchange of common technical data within a project.

It also gives details about the coding of Data Modules (Para 4.2) and their associated information objects and external documents (Para 4.3). It also describes Data Module List (DML) (Para 4.4) used for planning, management and control Data Modules production and for exchanging Port/Ship Configuration Data.

The means to interchange of Data Modules are also described in this chapter (Para 4.6).

Chap 5 - Standard codes

This chapter gives a description of the following Shipdex Standard Tables (SST):

- Manufacturer Identification Code
- Model Identification
- Standard Numbering System
- Information Code
- SFI® Group System
- Language and Country
- Task Frequency
- Unit of Measure
- Personnel Skill
- Personnel Category
- Maintenance Planning Task Code
- Learn Codes

to be used in the Data Module generation and coding.

Chap 6 –Writing Rules

This chapter gives definitions and guidance on using the XML to create Data Modules and shall be used by technical authors to produce the following types of Data Modules:
This chapter gives definitions and guidance on using the XML to create Data Modules and shall be used by technical authors to produce the following types of Data Modules:

- Descriptive
- Procedural
- Illustrated part data
- Maintenance Planning
- Comments
- Publication module
- SCO content

in accordance with the rules defined for the following information sets:

- Description and operation
- Maintenance procedure
- Troubleshooting
- Illustrated parts data
- Service Bulletin/Letters
- Maintenance Planning
- Learning

## *2.5. Request for change. The Shipdex Protocol Maintenance Group*

Proposals to amend Shipdex™ Protocol must be submitted in the full knowledge that all shipping users may be affected by changes to the specification, and will be accepted only under common agreement.
This chapter describes how requests for explanation of, or changes to, Shipdex™ Protocol should be handled.

The maintenance and improvement of this Protocol is given to the **Shipdex™ Protocol Maintenance Group** (**SPMG**).
The SPMG considers change proposals (CPFs) at each meeting and may ratify them for incorporation in the Protocol.
Any queries or proposals relating to changes to the Protocol should be addressed to the SPMG Technical Manager using the on line Change Proposal Form (CPF) at www.shipdex.com "registered member area".

The **SPMG** is composed of the following companies:

| | |
|---|---|
| | G&C Shipping |
| MAN Energy Solutions | MAN Energy Solutions |
| | MASTERMIND Shipmanagement (chairman) |
| Rolls-Royce | Rolls-Royce Marine (Kongsberg Maritime) |
| Shipdex CONSULTING | Shipdex Consulting (*Technical Manager*) |
| WIN GD Winterthur Gas & Diesel | Winterthur Gas & Diesel |
| YANMAR | Yanmar |

In order to assure consistency and to avoid duplications SPMG is also in charge to maintain the following Shipdex™ Standard Tables (see Chapter 5):

- Manufacturer Identification Code
- Model Identification
- Standard Numbering System
- Information Code
- Language and Country
- Task Frequency

- Unit of Measure
- Personnel Skill
- Personnel Category
- Maintenance Planning Task Code
- Learn Code

SPMG is also in charge to avoid MI duplications between Shipdex™ and military communities. For this reason every request to register an MI for the shipping community will be previously submitted for acceptance to NATO Support Agency (NSPA www.nspa.nato.com) by SPMG.
Accepted Shipdex™ MIs will be registered at NSPA too.

Copies of Shipdex™ Protocol valid issues can be obtained at *www.shipdex.com* upon registration.

# 3. THE SHIPDEX™ PROTOCOL

## *3.1. The Shipdex™ Protocol criteria*

The Shipdex™ Protocol specification criteria is to provide the final user with essential, complete and non-redundant technical information, whose main documentation contents are strictly linked to logistic studies (if any) or equivalent analysis and related maintenance strategies.

The documents contents are gathered in an organic way, with a different structure depending on the type of data dealt with, in Data Modules (DMs) that represent the macro-information components.

Every DM corresponds to a specific, uniquely identified, electronic file produced with XML language, allowing to structure and identify each individual information contained in the DM itself.

Every Data Module contains data supplied in XML format and can refer:

- other Data Modules
- Information objects (illustrations, symbols, multimedia objects)
- External documents (PDF, MS Office)

### *3.2. Information covered by Shipdex™ protocol*

The Shipdex™ protocol covers the exchange of the main information listed in table 2.6.1.

| EQUIPMENT LIST INFORMATION | | | |
|---|---|---|---|
| **No.** | **(macro) information** | **Type** | **Size** |
| A1 | IMO number | num | 10 |
| A2 | SFI®/other functional code | alphanum | 15 |
| A3 | Name of equipment | alphanum | 80 |
| A4 | Type and Model | alphanum | 40 |
| A5 | Maker code | alphanum | 5 |
| A6 | Maker name | alphanum | 30 |
| A7 | Serial Number | alphanum | 20 |
| A8 | Technical description (pdf) | alphanum | - |
| A9 | Part Number | alphanum | 30 |

| EQUIPMENT SPARE INFORMATION | | | |
|---|---|---|---|
| **No.** | **(macro) information** | **Type** | **Size** |
| **B1** | Part Number | aphanum | 30 |
| **B2** | Description | alphanum | 60 |
| **B3** | Quantity installed - Unit of Measure | alphanum | 6 |
| **B4** | Quantity installed - Value | num | 6.2 |
| **B5** | Equivalent to PN (opt) | alphanum | 30 |
| **B6** | Recommended spare qty onboard (opt) | num | 4 |
| **B7** | Marpol Annex VI (opt) (yes/not) | alphanum | 1 |
| **B8** | Customer number (opt) | alphanum | 30 |
| **B9** | Additional information (opt) | alphanum | 100 |
| **B10** | Illustrations (opt) | - | - |
| **B11** | Replaces PN (opt) | aphanum | 30 |
| **B12** | Replaced by/Obsolete PN (opt) | alphanum | 30 |
| **B13** | Replaced by/Usable PN (opt) | alphanum | 30 |

| MAINTENANCE TASK INFORMATION | | | |
|---|---|---|---|
| **No.** | **(macro) information** | **Type** | **Size** |
| **C1** | Title | alphanum | 80 |
| **C2** | Task ID (opt) | alphanum | 15 |
| **C3** | Maintenance class (Information code) | alphanum | 3 |
| **C4** | Job description (PDF or other) | alphanum | - |
| **C5** | Periodicity - Unit of Measure | alphanum | 4 |
| **C6** | Periodicity – Value | num | 6 |
| **C7** | Total duration (in hours) (opt) | num | 4,2 |
| **C8** | Required Support Equip. (opt) | alphanum | 25 |
| **C9** | Required Manpower skill (opt) | alphanum | 4 |
| **C10** | Required Manpower category (opt) | alphanum | 4 |

| | | | |
|---|---|---|---|
| **C11** | Required Manpower ID (opt) | num | 5 |
| **C12** | Required spare parts (opt) | alphanum | 30 |
| **C13** | Safety precautions (pdf) (opt) | alphanum | - |
| **C14** | Work cards (pdf) (opt) | alphanum | - |

| OTHER INFORMATION | | | |
|---|---|---|---|
| **No.** | **(macro) information** | **Type** | **Size** |
| **D1** | Operations (pdf) (opt) | alphanum | - |
| **E2** | Troubleshooting (pdf) (opt) | alphanum | - |

Tab 2.6.1 main macro-information

### *3.3. General Shipdex™ data organization*

Information required to exchange data related to the Product is to be produced as discrete pieces of information called Data Modules (DM) and gathered into a *Shipdex™ dataset*.

All Data Modules have a basic structure which is fully defined in Shipdex™ Protocol - Chapter 3.

Information sets are used to establish the required scope of the information and Data Module coding strategy.
The use of information sets is fully defined in Shipdex™ Protocol - Chapter 3.

Depth of information is defined as a combination of the breakdown and the requirements of the Product maintenance policy (on the basis of manufacturers criteria and customers needs).
During the development and update of Data Modules, quality assurance procedures are required to ensure that the contents of the Data Modules are adequate and technically accurate.
Details of these procedures are given in Shipdex™ Protocol - Chapter 3.

Data Modules shall reflect the breakdown of the Product as defined by Product manufacturers.

All Data Modules are produced in accordance with structural rules. These are reinforced by writing and illustration rules, together with warnings, cautions and notes. The rules are supported by specific guidance for authoring Data Modules. All these rules are given in Shipdex™ Protocol - Chapter 6: Authoring rules.

### *3.4. Data Module*

This chapter explains the general structure of a Data Module. There are many Data Module types which are appropriate for use in the production of all technical information required in operation and maintenance of the Product.

The Data Module types that Shipdex™ Protocol makes use are:

- Descriptive and operational
- Procedural
- Illustrated parts data (IPD)
- Troubleshooting
- Maintenance Planning
- Publication
- Comment
- SCO content
- Learning
- SCO Content Package Module (SCPM)

The above Data Module types are governed by the following S1000D™ **issue 2.3** xml schemas:

- Descript.xsd (Descriptive, operational and troubleshooting)
- Proced.xsd (procedural)
- ipd.xsd (Illustrated parts data)
- schedule.xsd (Maintenance Planning)
- pm.xsd (Publication)
- comment.xsd (Comment)

and by the following S1000D **issue 4.2** xml schemas:

- scocontent.xsd (SCO content)
- learning.xsd (Learning)
- scormcontentpackage.xsd (SCO Content Package Module)
- lom.xsd (to be used to validate SCPM data modules)

available for a free download on www.s1000d.org

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All Data Modules have a basic structure which is comprised of two sections:

- Identification and status (IDSTATUS) section, which is defined in the Shipdex™ Protocol - Chapter 6: Authoring rules
- Content (CONTENT) section, which is defined in the Shipdex™ Protocol - Chapter 6: Authoring rules

The IDSTATUS section is the first part of a Data Module. It contains identification data (e.g. Data Module code, title, issue number, issue date, language) and status data (e.g. responsible partner company, applicability, technical standard, quality assurance status, skill, reason for update, etc.). This section does not depend on the kind of information to be contained inside (descriptive, procedural and IPD).

The CONTENT section is the second part of a Data Module. It contains the text and illustrations that is presented to the user. This section depends on the kind of information to be contained inside (descriptive, procedural and IPD).

### *3.5. Information set*

The complete production process involves agreeing the purpose, scope and depth of the technical information, establishing the business rules for Data Module coding, production and exchange.

Information sets are provided to assist the generation part of the process. These define the purpose, scope and depth of the technical information that is to be produced for operation and maintenance of the Product and subsequently establishing the basic DML.

Shipdex™ protocol, based on the macro-information listed on Chapter 2, makes use of the following information sets:

- Descriptive
- Procedural
- Illustrated part data
- Maintenance Planning
- Trouble shooting
- Learning

Full details about DM coding are provided in Shipdex™ Protocol - Chapter 4.

Full details about DM writing rules are provided in the Shipdex™ Protocol - Chapter 6: Authoring rules.

# 4. THE EXCHANGE OF SHIPDEX™ DATASETS

## *4.1. Scope*

To achieve an orderly and systematic digital exchange of Shipdex™ datasets and other related information (DML, information objects and external documents), it is necessary to work within a set of formal data interchange standards and procedures. This chapter details the requirements and provides background for implementation.

## *4.2. Exchange data format*

The basic exchange unit defined in this chapter is a Data Module. For all types of Data Modules the references to other Data Modules, Information Objects and External Documents are given within the Data Module text.

## *4.3. Data Module text*

The textual content of a Data Module is tagged with the Extensible Mark-up Language (XML).
The logical structure of every Shipdex™ Data Module is defined in the relevant XML Schemas.

## *4.4. Information Objects*

The illustrations referenced within a Data Module are line drawings or photographs.
The allowed formats are: JPG, TIFF, BMP, SVG, CGM, PNG, EPS and PDF.

The multimedia objects referenced within a Data Module are videos or audios.
The allowed formats are: WAV, AVI, MOV, Flash and 3D-PDF.

## *4.5. External Documents*

The External Documents referenced within a Data Module are in PDF or MS Office format.

## *4.6. Shipdex™ exchange package structure*

A complete Shipdex™ exchange (transfer) package consists of one DML, as described in Shipdex Protocol specification at Para 4.4, and at least one of the following data:

- Data Modules (DMs)
- Information Objects related to the DMs
- External Documents related to the DMs

A Shipdex dataset shall contain the data for just one product.

## *4.7. Package format*

All the Data Modules, Information Objects, External Documents and DML related to a specific Product (this is called "Shipdex™ dataset") shall be exchanged (transferred) making use of electronic supports (e.g. DVD, CD) validated and signed by the responsible company.
A separate Shipdex™ dataset shall be supplied for every Product/Manual supplied.
Every electronic support (DVD, CD) can include one or more Shipdex™ datasets.

Every Shipdex™ dataset shall be identified by the following information:

- MIC (Manufacturer Identification Code equal to <rpc>)
- Contract Number
- Product identification (the MI is recommended)
- Shipdex™ highest version used to develop the dataset in the format of N-n (e.g. 2.1) where:
    - **N** identifies the major issue
    - **n** identifies the minor issue

The above information shall be separated by "#"

A Shipdex dataset can contain data modules developed in accordance with Shipdex minor issues within the same major issue (e.g. 2.0, 2.1 and 1.2 cannot be supplied in the same dataset).

The mandatory structure of every Shipdex™ dataset package is shown in figure 4.7.1.
The below package can include data modules at issue 3.0 or upper only.

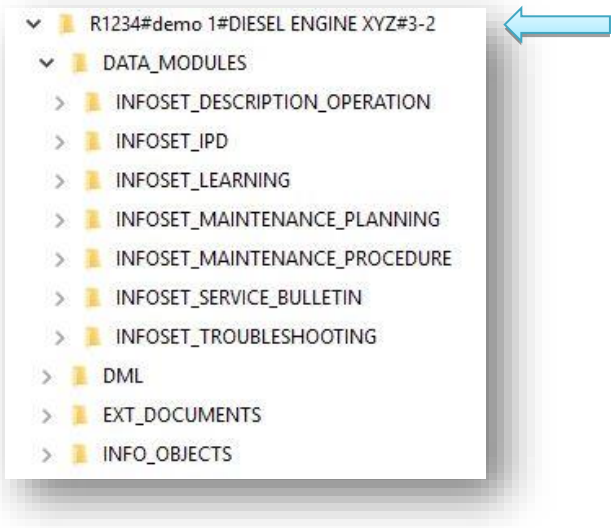


Fig. 4.7.1 Shipdex™ dataset structure

# 5. SHIPDEX™ STANDARD CODES

To assure consistency among all the Shipdex™ data exchange projects, standard codes have to be defined and used by data suppliers (manufacturers).

The Shipdex™ Protocol describes the Shipdex™ Standard Tables (SST) to be used, with reference to the following types of codes:

- (MIC) Manufacturers Identification Code
- (MI) Model Identification (a Data Module Code partition)
- (SNS) Standard Numbering System (a Data Module Code partition)
- (IC) Information Code (a Data Module Code partition)
- SFI® Group System
- Language-Country
- Task frequency
- Unit of Measure
- Personnel category
- Personnel skill
- Maintenance Planning Task Code
- Learn Code

In order to assure consistency and avoid duplications the Shipdex™ Protocol Maintenance Group (SPMG) is in charge to maintain the above-mentioned tables, with the exception of the SFI® Group Systems.

SPMG is also in charge to avoid MI duplications between Shipdex™ and military communities. For this reason every request to register an MI for the shipping community will be previously submitted for acceptance to NATO Support Agency (NSPA: www.nspa.nato.com) by SPMG.
Accepted Shipdex™ MIs will be registered at NSPA too.