End-to-End Data Management Technology
E2EDM Data Provider User Guide
(version 1.1.1, May 2008)

INSTALLATION AND SETUP
1. INTRODUCTION 3

2 DATA PROVIDER OVERVIEW 6
   2.1 Purpose 6
   2.2 Components 6
   2.3 Use requirements 6

3 INSTALLATION 9
   3.1 Software installation 9
   3.2 Software setup 11

4 USER INTERFACE 12

5 ADMINISTRATION 14
   5.1 Application settings control 14
   5.2 Task scheduler control 20
   5.3. Localization of system data elements 22
1 INTRODUCTION

1.1 Scope

The end-to-end data management (E2EDM) technology has been developed by the IODE/ICOMM ETDMP (Expert Team on Data Management Practices) and Russian NODC under the E2EDM Pilot Project (2004-2006). This technology sits on top of the local data systems managed by the IODE Data Centers and provides external end-users with “transparent” and remote access to the metadata, data and products (resources) made available from or generated by these local data systems.

The E2EDM technology includes the following software components:

- Data Provider provides access to the local data system of each participating IODE Data Center. As soon as the Data Provider is installed as a “wrapper” on top of the local data system, that system becomes a data source for the E2E-based distributed data system;
- Integration Server, at the next higher level, interacts with Data Providers to manage the overall network of data sources.

The purpose of this document is to describe the process of installation of the Data Provider and its maintenance.

The document is intended for specialists of Data Centers supporting the Data Provider software.

1.2 Overview of the document

The document includes the following sections:

Section 1 - Introduction

Section 2 – The Data Provider functions, and its hardware, software and other technical requirements.

Section 3 – A set of instructions to be followed when installing the software in a Data Center.

Section 4 – A guide to the use of the User Interface for technical support of the Data Provider in a Data Center.

1.3 Terms and definitions

Data set (local) - set of data (or metadata) being served by a Data Center. It is characterized by a specific data model, data coding system, data storage system and format, and any conditions placed on data access.

Distributed Data Source System – set of data sources in Data Centers operating under the E2EDM technology Integration Server.

Data Source - combination of the Data Provider (software component) and local data sets (information component). One Data Provider installed in a Data Center should interface with all local data sets of the Center.

Integration Server - E2EDM technology software performing E2EDM Distributed Data System (DDS) data sources management and reception and execution of requests from external software applications addressed to the DDS data sources.

Resources - local data sets representing DSS data sources. A resource (single) is a local data set or part of it. A resource has a unique identifier and may consist of structural data units (resource instances). The content and structure of a resource are recorded in the resource description and discovery metadata of the DSS.
The Integration Server performs periodic harvesting of the DDS resource discovery metadata and uses them to access distributed data sources on request from the portal of the system. On request from the Integration Server, Data Provider performs data sampling out of the local data set by request criteria, data unification and presentation of sampled data in the form of a transport data file.

**Code** - names of objects and values used for unambiguous understanding of data in information systems. Code is unambiguously defined by a coding system (ISO, IOC, WIS, etc).

**System codes** – codes of resource description elements (data accessibility, spatial presentation, storage system, etc). System codes are maintained as a controlled list of codes and used for description of DDS resources.

**System dictionaries** – codes and structured descriptions of objects (organizations, ships, buoys, satellites, etc.). System dictionaries are used for unification of data coding by mapping local codes into system codes.

**Data element** – atomic portion of data with specific properties (code, name, units of measurements, data type, etc). Data elements can be:

- metadata (information on data such as identifiers of country, organization, platform; time period, spatial coverage, etc.
- values of marine environment parameters such as sea surface or subsurface ocean temperature and salinity.

Local data elements compose local data sets in Data Centers. System data elements are data elements managed by the DDS. The Data Provider performs mapping of local data elements into system data elements assuring data unification.

**Data exchange protocol** – agreements regulating data exchange between the Data Provider and Integration Server. Data exchange protocol consists of request-message, response-message and transport data file.

**Transport data file** – data set provided by a data source in response to a request from the Integration Server addressed to the local data system

1.4. Contacts

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1.5 References:

<table>
<thead>
<tr>
<th>NN</th>
<th>Title</th>
<th>Contents</th>
<th>Version and updating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>E2EDM Overview</td>
<td>General information about E2EDM technology and implementation of this technology</td>
<td>Updated May 2008</td>
</tr>
<tr>
<td>2.</td>
<td>The Checklist of technical requirements for data providers for E2E</td>
<td>Describes requirements for IODE data centres to build the E2E Data providers network</td>
<td>Issued 09 March 2007</td>
</tr>
<tr>
<td>NN</td>
<td>Title</td>
<td>Contents</td>
<td>Version and updating</td>
</tr>
<tr>
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</tr>
<tr>
<td>3.</td>
<td>E2EDM technical specification v.1.0</td>
<td>Describes technical specifications (model, metadata structures, data exchange protocol and etc.) the E2EDM technology (TO BE UPDATED!!!)</td>
<td>Updated 15 Jan 2007</td>
</tr>
<tr>
<td>4</td>
<td>E2EDM Concept XML Schema</td>
<td>XML document includes ocean and marine meteo parameters which circulates under the distributed data system (current data source federation).</td>
<td>Updated 16 November 2007</td>
</tr>
<tr>
<td>5</td>
<td>E2EDM Global XML Schema</td>
<td>Includes XML structures of metadata classes (packages) used for E2EDM metadata records construction.</td>
<td>Updated 14 October 2007</td>
</tr>
<tr>
<td>6</td>
<td>E2EDM User's Manual</td>
<td>Document is considered as quick-start guide for the E2EDM technology users (general architecture of the E2EDM technology, installation and use of the E2EDM Data Provider and Integration Server software). The document is intended for data centres to built the distributed data system.</td>
<td>Updated 15 Jan 2007</td>
</tr>
<tr>
<td>7</td>
<td>E2EDM Integration Server User Guide</td>
<td>Includes the detail rules and procedures how to install, configure and run E2EDM Integration Server software. (TO BE UPDATED!!!)</td>
<td>v.1.0., updated 05 May 2007</td>
</tr>
<tr>
<td>8</td>
<td>E2EDM Data Provider User Guide - Installation and setup</td>
<td>Describes detail rules, procedures and web-forms for the Data Provider installation, registration and maintenance. The document is intended for system administrators of the data centers and other institutions responsible for providing data to the system.</td>
<td>v.1.1.0 Updated September 2007</td>
</tr>
<tr>
<td>9</td>
<td>E2EDM Data Provider User Guide - Registration and maintenance of resources.</td>
<td>Describes detail rules, procedures and web-forms for registration and maintenance of the local resources of distributed data sources system. The document is intended for operators of the data centers.</td>
<td>v.1.1.0 Updated September 2007</td>
</tr>
<tr>
<td>10</td>
<td>E2EDM Ocean Data Portal User Guide</td>
<td>Describes detail rules, procedures and web-forms for use Ocean Data Portal basing on the E2EDM technology. The document is intended for end-user for enter and access to resources of the distributed data system. (TO BE UPDATED!!!)</td>
<td>v1.0 Updated December 2007</td>
</tr>
</tbody>
</table>


The IODE Ocean Data Portal prototype based on E2E technology is available at (note: secured website, username and password may be requested from…?):

2 DATA PROVIDER OVERVIEW

2.1 Purpose
The Data Provider software is an E2EDM technology component. It performs:

- connection to local data sets maintained by the Data Center;
- generation and updating of description of resources in compliance with the current status of the local data sets;
- access to resources, with any data sampling based on the criteria of the request from the Integration Server, structural and code unification of data, and transport data file formation as a response to the request.

The Data Provider can handle the following types of data storage systems:

- DBMS databases;
- structured data files in “flat” (non-hierarchical) data formats;
- object files: electronic documents, images, structured data files in formats, which are not handled by the current version of the E2EDM technology software, Web-applications performing access to the local data sets.

2.2 Components
The Data Provider distribution package includes the following software:

- J2SDK v. 1.5.0_04 package,
- Apache web-server (v. 1.3.27 – basic version)
- Software providing access to DBMS databases (DiGIR, v. 2.0.),
- Data Provider web-module,
- Configuration files.

2.3 Use requirements

2.3.1 Computing equipment
The Data Provider should be installed on a separate server with no less than 1 GHz processor and 1 Gb of memory.

2.3.2 Software
The Data Provider is operated under Windows or Unix- (including Mac OS X?) operating systems and uses the following general software:

- Java J2SDK v. 1.5.0 and higher;
- Apache web-server v. 1.3.27 or higher with PHP v. 4;
- JBoss application server v. 4.0.0.

All of the above software components are available in the Data Provider distribution package.

The Data Provider only receives requests from and exchanges messages with the Integration Server. With this in mind the rules for the firewall should be spelled out to allow...
HTTP incoming and outgoing connections through port 8080 for the Integration Server IP address.

Where the JBoss application server is installed, it is necessary to have no less than 1 Gb of free disk space. This space is used to maintain log-files and generate temporary files inside the application server.

If any other applications are installed on the server where the Data Provider operates then they should not occupy ports and names of the above application servers and Web servers. In case other or similar software components and libraries are installed, they should not cause conflicts when they are used jointly or when their versions are incompatible.

2.3.3 Interaction with the local data system

The Data Provider should have access to the local data sets, presented as the DDBS resources.

2.3.3.1 Data managed in a DBMS

The Data Provider should have access to the local databases by the IP address in the local network of a Data Center, database name, password and other access tools specified during resource registration. The above access tools are not published and held in the Data Provider configuration files.

It is recommended to provide the Data Provider with the quickest possible access to the local databases.

If databases are located on a dedicated (external) database server it is necessary to arrange updating (replication) of the database from the main server (servers) of a Data Center, where data sets are maintained with the help of thematic technologies of the Center.

2.3.3.2 Structured data files

It is necessary to provide the Data Provider with access to the sets of structured (nonhierarchical) ASCII data files, which are handled in a way similar to databases.

In the current version of the Data Provider structured data files should be placed (updated on a regular basis) to the appropriate hard disk partition of the PC (or other host computer), where the Data Provider is installed.

The path to the data file directory is specified in the process of resource registration. The above information is not published and held in the Data Provider configuration files.

2.3.3.3 Object data files and Web-applications

It is necessary to provide the Data Provider with access to the sets of object data files (images, documents, software applications, etc.) or web-applications by the URI address or full path to files from the PC (or other host computer) for the Data Provider. The above information is not published and held in the Data Provider configuration files.

The Data Provider copies object data files to the appropriate hard disk partition.

2.3.4 Network communication with the Integration Server

2.3.4.1. Communication process

The Integration Server checks the availability of the DDBS data sources, synchronizes system codes, elements and dictionaries, collects resource descriptions from Data Providers, receives an XML-request from external applications, identifies Data Providers that should be involved, and distributes elementary requests among Data Providers.
In response to an XML request the Data Provider sends an XML message to the Integration Server containing a reference to the transport (objective) file. If necessary the Integration Server independently extracts files by the references given in the XML message and sends both the response and data file or just the response to the external application.

2.3.4.2 Ports

HTTP incoming and outgoing connections should if possible be allowed through port 8080 for the Integration Server IP address. 8080 is a standard port for the JBoss application server. If necessary however, it is possible to choose another port.

2.3.4.3 Security

The Data Provider receives requests only from the registered Integration Server. The software does not allow direct and uncontrolled communication between the Data Provider in one Center and Data Providers in other Centers or between the Data Provider remote applications. To ensure security the IP address of the source, from which a request to the Data Provider arrived, is checked. If the IP address does not agree with the specified IP address of the Integration Server, a request is not handled and the Data Provider sends in response an HTTP status: 403 Forbidden. This allows data transmission to be protected from unauthorized requests.

2.3.5 Institutional support

The Data Provider should be operated by an information technology specialist of a Data Center, who is responsible for:

- installation of the Data Provider;
- maintaining the Data Provider operations with the help of the Administrator User Interface;
- interaction with the developers on the issues of Data Provider software upgrades, on alarm conditions, and when help from the developers is needed.
3 INSTALLATION

3.1 Software installation

The Data Provider distribution package includes the following software:

- Apache_1.3.28-win32-x86-no_src – Apache server distribution package
- php-4.4.4-Win32 - php distribution package
- jdk-1_5_0_04-windows-i586-p - java distribution package
- jboss-4.0.0.exe - JBoss distribution package
- digir2.zip – archive with the DB access service (DiGIR)
- dpms.war.zip – Data Provider Web-module

To install the required server software the following paths are recommended:

- Apache - c:/usr/local/Apache
- php - c:/usr/local/php
- Apache server directory - c:/www
- jboss - c:/jboss-4.0.0

Sequence of operations to install the Data Provider:

1. Apache web server is installed. It is recommended to install Apache web server to the directory with no spaces.
2. php interpreter is installed by simple copying. It is recommended to install php interpreter to the directory with no spaces.
3. The Apache server file httpd.conf is edited in the following way:
   - php module is spelled out (an example is given for version 4.x):
     LoadModule php4_module c:\usr\local\php\sapi\php4apache.dll
     AddModule mod_php4.c
     AddType application/x-httpd-php .php

DiGIR directories are spelled out:

#The DiGIR administrative interface. The settings allow access
#only from the local host, meaning that you can only access the admin
# folder from the machine that is running the web server. The admin
# folder is physically located at c:/var/DiGIRprov/admin, and is
# accessible through the web browser at the address: http://localhost/digir2/admin

Alias /digir2/admin C:/www/digir2/admin
<Directory C:/www/digir2/admin>
    AllowOverride None
    Order deny,allow
    #Deny from all
    # Allow from 127.0.0.1
Allow from all
DirectoryIndex index.html, index.php
</Directory>

# Alias for the DiGIR Provider service. The settings are for a
# provider that was installed to c:/var/DiGIRprov, with the default
# folder name (www) for the location of the DiGIR php scripts.
Alias /digir2 C:/www/digir2/www
<Directory C:/www/digir2/www>
  AllowOverride None
  Order allow,deny
  Allow from all
  DirectoryIndex index.html, index.php
</Directory>

4. PHP setting (php.ini file should be copied from the php distribution package to the
directory c:/windows)
libraries are spelled out by removing comment indicators on the lines
extension=php_iconv.dll
extension=php_mbstring.dll
extension=php_ming.dll
extension=php_sockets.dll

If a DBMS different from MySQL is used the appropriate library should be
uncommented.

It is possible either to copy all dll libraries from the directory php/extensions to the
directory windows/system32 or to spell out the variable extension_dir in php.ini.

Apache server is started, operability is checked by creating the script <?php phpinfo();
?>

5. jdk version 5 is installed. The system variable JAVA_HOME is created in the
directory, where jdk. is installed. It is recommended to use the directory with no spaces.

6. JBOSS is copied (on default c:/jboss-4.0.0), dpms.war is copied to the directory
jboss-4.0.0/server/default/deploy
The script jboss-4.0.0/bin/run.bat is initiated.

7. If JBoss application server functions properly, it is recommended to install it as a
service. If OS Windows is used, paths to directories are edited in bat-file jboss-
4.0.0/bin/installJbossAsService.bat. Bat-file is initiated. If the result is successful, in the list of
Window services a service with the name JBossAS appears, which is responsible for the
application server operation.
If the OS is Unix-like, paths to directories are edited in the jboss shell-file - 4.0.0/bin/jboss_init_redhat.sh. Shell-file is initiated.

3.2 Software setup

After installation it is necessary to check and if needed to correct the paths to directories in the following files:

1) digir2/www/localconfig.php
2) dpms.war/WEB-INF/web.xml
3) jboss-4.0.0/server/default/deploy/scheduler-service.xml

These files contain paths to the directory of DB access service (DiGIR) and paths to the directories of the Data Provider Web-module. Wrong path specifications result in errors when pages of the Data Provider administrative interface are downloaded.
4 USER INTERFACE

Purpose

The User Interface allows a user to choose the Data Provider (DP) functions and to switch to the relevant section of the menu.

Layout (see Figure)

1 – Interface header, switch to the E2EDM technology Website, current date; 2 – functional sections of the main menu; 3 – explanatory text and the DP user authorization block; 4 - login/password of DP users; 5 – feedback; 6 - DP identification information (data source identifier, date of updating and version of DP).

Description

1. Start the Data Provider (address is specified in the application configuration file when DP is installed) and choose function:
   - Administrator – configuration and maintenance of the Data Provider
   - Operator - registration and maintenance of resources of the Center
   - Codes, Dictionaries, Data Elements – access to system codes, dictionaries and data elements
   - Help – copying of this document and feedback.
2. Access to functions is provided with a password.
3. If necessary use feedback, i.e. use E-mail of E2EDM developers.

Additional notes

Login and password of the Data Provider users in your Center are specified by the DP Administrator.

Error (comment) report

No

Alarm conditions

1. User Interface page is not started.

Probable cause – settings of the DP Web-module configuration file have been changed, DP Application Server does not function.
Actions: update the page, contact DP administrator
5 ADMINISTRATION

Purpose
Assure operability of the DP.

Layout
1 – hierarchical menu of functions
2 – explanatory text

Description
1. Choose section of the menu:
   • Application settings control
   • Task scheduler control
   • Localization of system elements
   • Log

Error (comment) report
None

Alarm conditions
None

5.1 Application settings control

Purpose
Edit configuration files of the Data Provider application, which define all external parameters of its operation (config.xml и portal.xml), and of the application server Web-descriptor (web.xml).

Layout
1 – main menu
2 – menu of configuration files
3 – switch to editing

Description
1. Choose in the file menu:
   • configuration file of the Data Provider application
   • configuration file of the Data Provider functions
   • configuration file of the application Web-server
**Additional notes**
Settings should be changed only if necessary. All settings are mandatory; no value may be left missing.

**Error (comment) report**
None

**Alarm conditions**
When switching to the chosen section of the menu, a page of the section does not open.

*Probable cause* – settings of the configuration file of the Data Provider Web-module web.xml have been changed, thus the DP application server does not function properly.

*Actions:* update the page, contact?? the DP Administrator

5.2.1 Editing of the configuration file of the Data Provider application

**Purpose**
Edit the configuration file web.xml, which defines parameters of the Data Provider Web-module. Configuration parameters are divided into sections:

- e2edm-Filter – specifying paths to the directories of DP, DB Access Service, DP identifier;
- ResponseOverrideFilter – specifying functional parameters of the Data Provider operation: maximum connections, waiting time for a connection, waiting time for accepting a request, etc.
- IPSecureFilter – specifying IP-addresses from which it is allowed to log on through the administrative Web-interface and to send requests to this DP filter.

**Filter choice layout**
1 – main menu
2 – menu of filters
3 – switch to editing

**Description**
1. Choose:
   - e2edm-Filter
   - ResponseOverrideFilter
   - IPSecureFilter

5.2.1.1 e2edm-Filter editing

**Purpose**
Setup parameters of this configuration section define paths of locating the DP system files. A list of e2edm-Filter setup parameters is given in Table 1.

<table>
<thead>
<tr>
<th>Name</th>
<th>Default value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>datastorageId</td>
<td>RNODC-IBD</td>
<td>Data Provider identifier</td>
</tr>
<tr>
<td>Name</td>
<td>Default value</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>serverName</td>
<td>localhost:8080</td>
<td>Server name (port)</td>
</tr>
<tr>
<td>dasServer</td>
<td><a href="http://data.meteo.ru:80/digir/DiGIR.php">http://data.meteo.ru:80/digir/DiGIR.php</a></td>
<td>URL to Data Access Service</td>
</tr>
<tr>
<td>integrationServer</td>
<td><a href="http://localhost:8080/iserv/controller">http://localhost:8080/iserv/controller</a></td>
<td>URL to the Integration Server entry point</td>
</tr>
<tr>
<td>E2ECodesMD_path</td>
<td>c:/jboss-4.0.0/server/default/deploy/dpms.war/codes/</td>
<td>Path to file of system codes (E2ECodesMD)</td>
</tr>
<tr>
<td>E2EElementsMD_path</td>
<td>c:/jboss-4.0.0/server/default/deploy/dpms.war/ElementsMD.xml</td>
<td>Path to the file containing a description of system data elements (en)</td>
</tr>
<tr>
<td>E2EElementsMD_path_ru</td>
<td>c:/jboss-4.0.0/server/default/deploy/dpms.war/ElementsMD_ru.xml</td>
<td>Path to the file containing description of system data elements (ru)</td>
</tr>
<tr>
<td>appPath</td>
<td>c:/jboss-4.0.0/server/default/deploy/dpms.war/</td>
<td>Path to the Data Provider application</td>
</tr>
<tr>
<td>ncFileDir</td>
<td>c:/jboss-4.0.0/server/default/deploy/dpms.war/ncResults/</td>
<td>Path to the temporary directory, to which transport data files are generated</td>
</tr>
<tr>
<td>instanceNCFileDir</td>
<td>c:/jboss-4.0.0/server/default/deploy/dpms.war/instances/</td>
<td>Path to the temporary directory to which files and descriptions of instances are generated</td>
</tr>
<tr>
<td>xml_cache</td>
<td>c:/jboss-4.0.0/server/default/deploy/dpms.war/md.xml</td>
<td>Path to the file containing descriptions of resources (en)</td>
</tr>
<tr>
<td>xml_cache_ru</td>
<td>c:/jboss-4.0.0/server/default/deploy/dpms.war/md_ru.xml</td>
<td>Path to the file containing descriptions of resources (ru)</td>
</tr>
<tr>
<td>xml_instance_cache</td>
<td>c:/jboss-4.0.0/server/default/deploy/dpms.war/instances/md_instances.xml</td>
<td>Path to the file containing descriptions of resource instances (en)</td>
</tr>
<tr>
<td>xml_instance_cache_ru</td>
<td>c:/jboss-4.0.0/server/default/deploy/dpms.war/instances/md_instances_ru.xml</td>
<td>Path to the file containing descriptions of resource instances (ru)</td>
</tr>
<tr>
<td>resourceId_mask</td>
<td>RU_RIHMI_</td>
<td>Mask of identifiers of the Data Provider resources. This mask is a unique identifier.</td>
</tr>
<tr>
<td>configFile</td>
<td>c:/jboss-4.0.0/server/default/deploy/dpms.war/WEB-INF/config.xml</td>
<td>Path to the Data Provider configuration file</td>
</tr>
<tr>
<td>properties_path</td>
<td>c:/jboss-4.0.0/server/default/deploy/dpms.war/WEB-INF/</td>
<td>Property-files storage</td>
</tr>
<tr>
<td>schemaProperties</td>
<td>c:/jboss-4.0.0/server/default/deploy/dpms.war/WEB-INF/classes/schema.properties</td>
<td>Paths to the directory containing the file of correspondence between elements of the conceptual schema and elements of the global schema</td>
</tr>
<tr>
<td>shedulerfile</td>
<td>c:/jboss-4.0.0/server/default/deploy/scheduler-service.xml</td>
<td>Path to the configuration file of the JBoss application server task scheduler</td>
</tr>
<tr>
<td>instanceConfig_path</td>
<td>c:/jboss-4.0.0/server/default/deploy/dpms.war/props/</td>
<td>Path to the system configuration files of generating resource instances</td>
</tr>
<tr>
<td>digirConfigPath</td>
<td>c:/www/digir/config/</td>
<td>Path to the Database Access Service (DiGIR)</td>
</tr>
<tr>
<td>initial_codes_mapping</td>
<td>c:/jboss-4.0.0/server/default/deploy/dpms.war/WEB-INF/c_mapping.xml</td>
<td>Path to the configuration file of mapping local codes into system codes</td>
</tr>
<tr>
<td>Name</td>
<td>Default value</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>codes_mapping</td>
<td>c:/jboss-4.0.0/server/default/deploy/dpms.war/codes_mapping.xml</td>
<td>Path to the code mapping file</td>
</tr>
<tr>
<td>codesRepositoryPath</td>
<td>c:/jboss-4.0.0/server/default/deploy/dpms.war/WEB-INF/admin.log</td>
<td>Path to the directory-repository of system codes, dictionaries and data elements</td>
</tr>
<tr>
<td>adminLogFile</td>
<td>c:/jboss-4.0.0/server/default/deploy/dpms.war/WEB-INF/admin.log</td>
<td>Path to the Data Provider system log</td>
</tr>
<tr>
<td>codifiersList</td>
<td>c:/jboss-4.0.0/server/default/deploy/dpms.war/codes/codetypes.cfg</td>
<td>Path to the file containing a list of codifiers with system codes</td>
</tr>
</tbody>
</table>

### Editing layout

1. main menu
2. page of setup parameters
3. parameter block:
   - parameter name
   - parameter value
   - parameter description
4. edit (at the end of the page)

### Description

1. Find on the page the setup parameter which needs editing. Use the field “Parameter description” in the parameter block.
2. Edit the field “Parameter value” using copy/paste function.
3. If necessary do the same operations with other parameters.
4. Press `Edit` at the end of the page and the parameter values that were set will be saved in the configuration file.

### Error (comment) report

None

### Alarm conditions

The page does not open. Check encoding of the file web.xml.. Maybe, while being edited manually, it was not saved in UTF-8 encoding. Save the file web.xml. in UTF-8 encoding using for instance XMLSpy.

5.2.1.2 ResponseOverrideFilter editing

### Purpose

Setup parameters of this configuration section to?? define parameters of the Data Provider operation: maximum number of connections, waiting time for a connection, waiting time for accepting a request, etc.

A list of setup parameters is given in Table 2.
### Table 2 – List of ResponseOverrideFilter setup parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Default value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum number of connections</td>
<td>100</td>
<td>Maximum number of connections per time unit. The connections are controlled by a connection manager</td>
</tr>
<tr>
<td>Waiting time for a connection (in seconds)</td>
<td>3600</td>
<td>Maximum time in seconds for a connection to wait to meet a request</td>
</tr>
<tr>
<td>Waiting time for accepting a request (in seconds)</td>
<td>3600</td>
<td>Maximum waiting time in seconds for accepting a request</td>
</tr>
<tr>
<td>Time for waiting a response after accepting a request (in seconds)</td>
<td>3600</td>
<td>Maximum time in seconds to wait for a response after accepting a request</td>
</tr>
<tr>
<td>Number of connection attempts</td>
<td>5</td>
<td>Number of connection attempts. 0 by default (attempts are forbidden)</td>
</tr>
<tr>
<td>Interval of configuration updating (in seconds)</td>
<td>0</td>
<td>Number of seconds to wait for configuration updates. This value is used to indicate a life time of information on configuration. 0 by default (updates are forbidden)</td>
</tr>
<tr>
<td>Interval for updating of the list of data sources (in seconds)</td>
<td>0</td>
<td>Number of seconds to wait for updating of information on the list of data sources</td>
</tr>
<tr>
<td>Maximum data source waiting time (determined by users) (in seconds)</td>
<td>3600</td>
<td>Maximum time in seconds to allow a user to be connected after data source timeout</td>
</tr>
</tbody>
</table>

**Editing layout**

1 – main menu  
2 – block of filter setting  
3 – edit

**Description**

1. Find on the page the setup parameter, which needs editing. Use the field “Parameter description” in the parameter block.

2. Press **[Edit]** at the end of the page and parameter values that were set will be saved in the configuration file.

**Error (comment) report**

No

**Alarm conditions**

The page does not open. Check encoding of the file web.xml. Maybe, while being edited manually, it was not saved in UTF-8 encoding. Save the file web.xml. in UTF-8 encoding using for instance XMLSpy.

5.2.1.3 IPSecureFilter editing

**Purpose**
Setup parameters of this configuration section define IP addresses allowed for connection to DP.

**Editing layout**
1. main menu
2. field of IP address
3. edit (at the end of the page)

**Description**
1. Specify comma separated IP addresses, from which access to DP will be allowed.
2. Press [Edit] at the end of the page and the parameter values that were set will be saved in the configuration file.

**Additional notes**
In this version of the E2EDM technology only the IP address of the Integration Server is specified.

**Error (comment) report**
No

**Alarm conditions**
No

**5.2 Task scheduler control**

**Purpose**
Specify the automated updating of resource descriptions and generation of instances for handling a local data set (DBMS database or structured file). Periodicity of updating is specified separately for each resource. In the menu the resource is presented by the information resource identifier (e.g. RU_RIHMIL_61).

The Integration Server performs updating of the DP files containing auxiliary information:
- system codes used for resource (resource instance) description;
- system data elements for mapping data elements of local data sets, being presented as resources;
- system dictionaries for mapping local codes into system codes;
- list of organizations by roles (data originator, data provider) used in resource description (the section Contacts, see Item 6).

Periodicity of updating files containing auxiliary information depends on frequency of changes introduced by the DSS Administrator. Changes are introduced into codes, dictionaries and data elements according to the following:
- codes are changed only in case of urgent necessity and when the DP version is modified;
- periodicity of changes in dictionaries is required if there are modifications of codes of organizations, ships, etc. At the stage of technology implementation the required periodicity of updating is once per week, at the stage of operation once per month or less frequently;
• periodicity of changes in data elements depends on completeness (coverage of local data elements held in data sets of Centers) of the current version of system data elements. At the stage of technology implementation the required periodicity of updating is once per week, at the stage of operation once per month or less frequently.

The Data Provider creates many temporary (working) files and it is necessary to delete them from time to time.

Task scheduler control consists in setting periodicity of updating codes, dictionaries and data elements and periodicity of clearing DP temporary folders containing working files.

Task parameters for updating auxiliary information are set as default (periodicity of updating is once per week).

**Layout**

1. main menu

2. task menu:
   - updating of system codes
   - updating of system elements
   - clearing of temporary directories
   - updating of the list of Web-service dictionaries
   - clearing of Web-service temporary directories
   - updating of the list of organizations by roles
   - RU_RIHMI_61
   - ……

3. edit, add, (set periodicity of updating resource description and generation of resource instances), delete -  

**Description**

1. Chose or in the task menu and you will switch to the task editing page

2. Edit task parameters. Description of parameters is given on the editing page. A parameter that may be edited most frequently is the task initiation interval.

3. Press at the end of the page and the parameter values that were set will be saved in the configuration file.

**Additional notes**

Task parameters set as default should be changed only if needed. Before editing, coordinate your actions with the DDBS Administrator.

**Error (comment) report**

No

**Alarm conditions**

No
5.3. Localization of system data elements

Purpose

System data elements are used for unification of heterogeneous and heteronymous elements (attributes of database tables, elements of data file records) of the local data sets provided by Data Centers. System elements have a unique code and specified properties (units of measurements, data type and format, etc. - see the section “Elements” of the main menu).

The process of unification consists in setting a one-to-one mapping between a local element and system element (e.g. Tw in the table of a local data set in a Data Center corresponds to the system element P0001_00 (water temperature: measured, Celsius degrees, float (4,2), etc.). This operation is referred to as “mapping” of elements and performed in the process of describing an information resource (see Item 6.1).

The use of a full (long) list of system data elements makes the operation of data elements “mapping” more complicated. The work will be easier if a local subset of system elements for the data of the Center is used.

Subsetting system elements consists in specifying those system elements, which are relevant for the data sets of a specific Data Center and will be used for the description of resources provided by this Center.

Layout

Main page
1 – main menu
2 – choice menu
of element category
3 – element
category choice control
4 – element
localization control
5 – table of
data elements

Menu of element
category choice (2):
• marine environment
• marine related activities
• …..
• metadata

Element choice control (3):
• mark element
  – enable marker ▲ in the first column of the table and mark elements being chosen in
leftmost column; (by default at the top of the table are elements contained in the current
local list of elements. Using sorting markers it is possible to represent at the top of the table those elements that are not contained in the local list.

- mark all – elements of the table (represented at the page or the entire list of elements – see below) will be marked as chosen;
- delete marking – cancellation of all chosen elements (represented at the page or the entire list of elements – see below)
- all pages/page-by-page – represent all elements of the list or page by page (50 element per page of the table);
- add elements – moving of elements chosen as a result of the above operations to the list of local elements

Localization control (4):
- local elements – NN is the number of elements in the current list
- clear list – deletion of the previously formed list of local elements;
- view list of chosen elements and save – switch to the separate window for viewing and saving the chosen system elements.

Description
1. In menu (2) choose one or several categories of data elements in accordance with the field of activities of a Center (metadata are obligatory). In the table a list of elements for the chosen categories will be represented.

2. View the list of table elements and compare it with the list (materials) of local data elements. Adjust (add or delete) the list of elements using choice control menu (3) and if the process of choosing has been completed, press “Add elements”.

3. When elements were added the number of “Localized elements” will grow by the number of added elements. Using “Clear list” it is possible to cancel the last addition or empty the list of local elements to specify a new choice.

4. (4). If the list of local elements is not empty (localized elements > 0), it is possible to view and save the elements using “View list of chosen elements and save”.

5. The current localized list is saved into the local image of the conceptual XML-schema of the technology.

Additional notes
1. It is recommended to create the local subset of elements before undertaking a description of resources. It is recommended to prepare in advance a table of correspondence of system elements to data elements of all data sets of the Center. Recommendations on the structure and preparation of the table are given in Section 7.1 of the Guide.

2. A list of local system elements should be changed only if necessary such as when in the process of resource description it is found that the system counterpart is missing or when it is planned to expand thematic fields of the data set. It is necessary to pay special attention to deleting elements from the local list because the deleted element could already have been used in a resource description and its absence will lead to errors in the Data Provider operation.

Error (comment) report

No
Alarm conditions
No