

# **DATA RETENTION SYSTEM**

**PRODUCT DESCRIPTION  
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# 1 GENERAL INFORMATION

This chapter describes the purpose and the general operational concept of the product as well as the conditions in which it is used.

## 1 Purpose

The Data Retention System (DRS) product makes it possible to work with the Core Subsystems of SPS Family of Products (SVC\_BASE) product on the side of the telecom operator.

## 1 Glossary

For a full glossary of terms used in this document, see the Glossary for the Core Subsystems of SPS Family of Products (SVC\_BASE) product [SVC\_BASE-DOC\_GLOSS].

## 2 Implementation Features

The product contains the following components which interact with the PETER-SERVICE SVC\_BASE product:

- applications used for initialisation of the PETER-SERVICE SVC\_BASE dictionaries;
- a set of screen forms providing interoperation of the telecom operator's employees with PETER-SERVICE SVC\_BASE;
- the SMD (538) adapter which performs the following operations:
  - it generates search jobs, which are received from authorised bodies via the SMD (538) protocol, in PETER-SERVICE SVC\_BASE with the help of special HAS operations;
  - converts the job execution results into the SMD (538) protocol's format;
  - it logs system events in its own log file and in the PETER-SERVICE SVC\_BASE database (using HAS operations).

## 2 Users

The product's users are the telecom operator's employees who are authorised to search, with the help of the product, for the information, which is either requested by investigation agencies or necessary to perform internal or criminal investigations. Depending on their positions and privileges, the product users can have the following roles:

- Administrator – an IT department expert whose duty is to administer and configure the product;
- Search Operator – an employee of a special division responsible for performing investigation activities, processing requests and their processing results and generating reports;
- Manager – a manager of the special division who grants certain privileges to search operators and monitors the compliance with all the proper rules using the system logs;
- Initiator – an authorised agency officer or an expert of the security department of the telecom operator who passes on the requests for information and receives reports on the search results;
- Data Download Operator – an authorised agency officer or an expert of the security department of the telecom operator who manages the process of data load to the warehouse.

## 3 Hardware Requirements

The product's hardware requirements are defined by the hardware requirements for the PETER-SERVICE SVC\_BASE product.

To support the SMD (538) protocol, the PETER-SERVICE SVC\_BASE interface server must be additionally equipped with a network interface controller for the Ethernet 10/100 BasT specification. The throughput of the communications channels must correspond to the requirements stipulated by the Appendix to the Regulations for Interoperation of Telecommunications Operators with Authorised Government Bodies Engaged in Criminal Investigation Activities as of 27.08.2005 (No. 538).

A user workstation should include a personal computer complying with the following minimum requirements:

- 1 GHz processor;
- 256 Mb RAM;
- 1024x768 colour monitor;
- keyboard;
- mouse.

## 4 Software Requirements

The product runs properly only if the Core Subsystems of SPS Family of Products (SVC\_BASE) product is pre-installed and configured accordingly.

The following software must be installed on the user workstation:

- an operating system (one of those listed below):
  - Microsoft Windows 2000/XP/2003;
  - Red Hat Enterprise Linux Advanced Server 4 Update 4.
- a Web browser (one of those listed below):
  - Microsoft Internet Explorer 6 SP1 – for Microsoft Windows 2000/XP/2003;
  - Mozilla Firefox 1.5 – for Red Hat Enterprise Linux Advanced Server 4 Update 4.

The following additional software is required to work with reports containing the search job results:

- a text editor (one of those listed below):
  - Microsoft Office Word 2003 or later – for Microsoft Windows 2000/XP/2003;
  - OpenOffice.org Writer 2.3 or later – for Red Hat Enterprise Linux Advanced Server 4 Update 4;
- a table editor (one of those listed below):
  - Microsoft Office Excel 2003 or later – for Microsoft Windows 2000/XP/2003;
  - OpenOffice.org Calc 2.3 or later – for Red Hat Enterprise Linux Advanced Server 4 Update 4.

To work with loaded statistics charts, the Adobe SVG Viewer plugin version 3.05 or later (for Microsoft Internet Explorer 6 SP1 only) is required.

# 2 FUNCTIONS

The product performs the following functions:

- activating data search job scenarios;
- creating a Web site view for working with PETER-SERVICE SVC\_BASE on the side of the telecom operator;
- supporting the SMD (538) protocol for interoperation of the PETER-SERVICE SVC\_BASE product installed on the side of the telecom operator with a similar system installed on the side of the authorised agencies.

## 1 Activating Data Search Job Scenarios

The product defines the initial values of the dictionary of telecom operators of the PETER-SERVICE SVC\_BASE product and activates the following data search job scenarios:

- requesting a subscriber card;
- searching for the subscriber's identifiers;
- searching for the data on balance top-ups;
- searching for the data on connections and calls.

## 2 Creating a Web Site View

The product provides a user interface for its administering, for managing the loaded data and also for transferring requests and accessing the search results on the side of the telecom operator.

### 1 Administration

The product allows registering new users in the PETER-SERVICE SVC\_BASE product and controlling their access rights via the Web interface.

Using the product, you can view the PETER-SERVICE SVC\_BASE product's system logs to audit the users' activities.

To view the logs of system events, you can select a source server of log records.

### 2 Data Load Management

The product allows loading data to any warehouse registered in the registry of PETER-SERVICE SVC\_BASE servers.

The users can manage a list of load formats and a registry of loaded data packets. The following information is provided for each load format:

- the telecom operator identifier;
- a code of the load format;
- a type of the data being loaded;
- a data format name;
- start and end dates of the load format's validity period;
- an attribute of automatic data load;
- sample names of files in a certain format.

You can edit the attribute of automatic data load and view a log of loaded packets in terms of their load formats.

Using the product, you can check a data packet, load (and re-load) and reject packets.

The following information is provided for each packet:

- the packet identifier;
- a packet registration time;
- file names within the packet;
- the current packet status;
- an operation being executed;
- the current operation status;
- a comment to the packet.

The product generates a graph of the temporal variation of the number of records in the loaded packets. The graph view depends on the type of load format. Each type of loaded data is associated with its own type of load formats:

- for subscriber data – “cut-off” and “update-unload”;
- for call and payment data – “event”;
- for base station data – “cut-off”.

The statistical graph view for the “cut-off” and “event” types of load format is a histogram showing how the number of records of loaded packets changes in time. Each column of the histogram corresponds to the total number of records of the packets loaded on a certain date. Also, there is an additional statistical graph created for the load format of the “event” type; it contains a list of packets divided by hours, with their statuses described.

The statistical graph view for the “update-unload” type of load format is a linear diagram showing the rate of data volume growth in time. The diagram’s X-axis defines a time interval, while its Y-axis shows the average number of records in packets for the specified period of time.

To manage data loading, a Web interface is provided for the product users so as to access the following dictionaries of the specified data warehouse:

- Base Stations – there is an interface implemented for viewing the dictionary’s records;
- Telecom Operators – there is an interface implemented for viewing the dictionary’s records;
- Switches – there is an interface implemented for viewing and editing the dictionary’s records;
- Trunks – there is an interface implemented for viewing and editing the dictionary’s records;
- Connection Types – there is an interface implemented for viewing and editing the dictionary’s records;
- Payment Types – there is an interface implemented for viewing and editing the dictionary’s records;
- Numbering Capacity of Telecom Operators – there is an interface implemented for viewing, creating, editing and deleting the dictionary’s records;
- Associated Numbers – there is an interface implemented for viewing, creating, editing and deleting the dictionary’s records;

The dictionary of numbering capacity contains summary information on telecom operators who were owners of phone number ranges, but then sold their range or a part of their range and are now using certain phone number ranges in particular periods of time. You can add or edit a dictionary record on condition that:

- the telecom operator which sells phone numbers is the owner of the entire range (including the first and last numbers in the range);
- any phone number in the range can be included only in one resale chain at a time.

You can add or edit a record of the dictionary of associated numbers on condition that:

- the associated ranges are of the same length (they include the same amount of phone numbers);
- a phone number has only one association at a time.

With the help of the product, you can define the telecom operator which a phone number belongs to. Upon the user request, the history of a given phone number is displayed, so the user can get information on how the number has been used and resold by telecom operators and with what numbers it has been associated (if it is an associated number).



The dictionaries of numbering capacity and associated number ranges are populated manually. If the dictionaries are populated, it becomes easier for the search operator to search for data in the warehouse. With the interface privileges set up, the search operator can search for information on the phone number specified in the request. As a result of such a search, a list of telecom operators and a search period specified when a search job is being added can be shortened, which facilitates the search results generation process. And the phone number specified when a search job is being added can be defined in the same format as its associated number (if it is available), which increases the chance of finding the required information on the specified number.

### **3 Request Transfer and Search Result Access**

Using the product, you can create requests and start active search job scenarios with the help of the user interface forms.

You can select search sources and define a start-up time for the search jobs.

To manage the document flow required for executing search requests, you can view the summary dictionaries (maps) of call types, base stations, switches and trunks stored in PETER-SERVICE SVC\_BASE.

You can manage the results of call data search by categorising some phone numbers, the data on which have been loaded, as internal. This allows controlling access of the users to the search results containing information on the calls made from or to these numbers.

The search results can be saved by the product in a .doc file of the MS Office Word 2003 XML format. When a report on jobs is being created, there are as many files generated as there are types of responses (subscriber, payment or call data) in the search results. If no result is found for a certain type of job, no report file is generated for it.

You can save the results of a search for data on connections in an .xml file of the MS Office Excel 2003 XML format. If viewed in MS Office Excel, the report contains only a summary of each row with the resulting data. In this case, if the report includes results of several jobs, each job's results are displayed in a separate sheet of the Excel book.

### **3 SMD (538) Protocol Support**

The product receives and processes official requests sent by the authorised agencies via the SMD (538) protocol.

The requests for information on subscribers, their calls and payments are registered in the database of the request server of the telecom operator, after which active search job scenarios get launched. Apart from this, the product receives and processes requests for reference data on trunks, base stations, roaming partners, switches, IP gateways, call types, additional services and payment types. The product generates responses to jobs in the format defined by the SMD (538) protocol. The set of fields shown in the search job results can vary depending on the data storage structure of the data warehouse.

To transfer the requests for information, the product registers the following objects in the database of the telecom operators' request server: a division, groups of permissions and users. To secure the data transfer process, the product checks the user data for compliance with the created profiles.

The product logs the following events in the request server database of the telecom operator: opening and closing sessions, receiving requests for creating new search jobs, receiving requests for information and sending responses. Also, the product logs system messages (creating TCP sockets, opening listening ports, etc.) in its own file system log.

# 3 INTEROPERATION WITH OTHER SYSTEMS

The product is an add-on product for the Core Subsystems of SPS Family of Products (SVC\_BASE) product. It provides access to the main functions of PETER-SERVICE SVC\_BASE by means of the Web interface and the SMD (538) adapter and also defines a set of scenarios to be used for performing search requests in the product installed on the side of the telecom operator.

The product can interoperate with external systems which support the SMD (538) protocol, e.g. the Service-SP-PU (SSP) product developed by PETER-SERVICE. The Service-SP-PU (SSP) product sends requests for information generated by authorised agencies to the product via the SMD (538) protocol and receives responses from the product.

For more information on the interoperation algorithm, see the Appendix to the Regulations for Interoperation of Telecommunications Operators with Authorised Government Bodies Engaged in Criminal Investigation Activities as of 27.08.2005 (No. 538).

# 4 PRODUCT COMPONENTS

This chapter describes the product's distribution package.

## 1 Applications

This section gives an overview of the product's applications.

### 1 SMD Protocol Adapter for DRS (DRS\_ADP\_538)

The SMD Protocol Adapter for DRS (DRS\_ADP\_538) application provides interoperation of the Core Subsystems of SPS Family of Products (SVC\_BASE) product, installed on the side of the telecom operator, with a similar system, installed on the side of the authorised agencies, via the SMD (538) protocol.

### 2 System-Wide Dictionaries Initialisation (DRS\_DICTS\_INIT)

The System-Wide Dictionaries Initialization (DRS\_DICTS\_INIT) application is designed to initialise the dictionary of telecom operators.

### 3 Request Processing Server Initialisation (DRS\_RQS\_INIT)

The Request Processing Server Initialization (DRS\_RQS\_INIT) application is designed to define a set of active search job scenarios.

### 4 DRS Tools (DRS\_WEB)

The DRS Tools (DRS\_WEB) application is designed to manage the Core Subsystems of SPS Family of Products (SVC\_BASE) product with the help of visual elements.

## 2 Documentation

Listed below are documents which are shipped with the product distribution package:

- Product Description (this document) [DRS-DOC\_PP];
- Maintenance Guide [DRS-DOC\_G3];
- User Guide for the DRS Tools (DRS\_WEB) application [DRS\_WEB-DOC\_USER];
- Administrator Guides for the product's applications.

# REVISION HISTORY

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