



LNI.Connector

Version 1.0, June 2007

1. What is LNI-Connector?

Every implementation of **Smallworld Logical Network Inventory** (LNI) requires a populating of an LNI database with appropriate network data and maintaining the accuracy and consistency of the data in the LNI database with respective telecom networks. **LNI-Connector** has been developed to support and simplify these two processes, i.e. to enable network data import from **Network Management Systems** (NMS) to LNI database and to synchronize LNI database with corresponding NMS-s.

LNI-Connector is an add-on module for LNI. It is capable of importing whole networks like SDH, ATM and other.

LNI-Connector supports initial data import and then periodical synchronization. The synchronization process consists of detection of discrepancies between NMS and LNI databases, showing them for user's verification and automatic update of LNI database.

While updating LNI database, LNI-Connector detects possible conflicts between NMS data and changes made manually by the users.

Logical devices in LNI database are automatically mapped on physical equipment in Physical Network Inventory database.

2. Why do LNI users need LNI-Connector?

Logical Network Inventory is a database for all transmission equipment of a telecommunication operator. It is a place for analysis of network capacity and for planning new transmission services for clients. The great advantage of using LNI for planning comes from having whole telecommunication network in one repository.

Telecommunication network usually is divided into several sub-networks. An example is shown below.

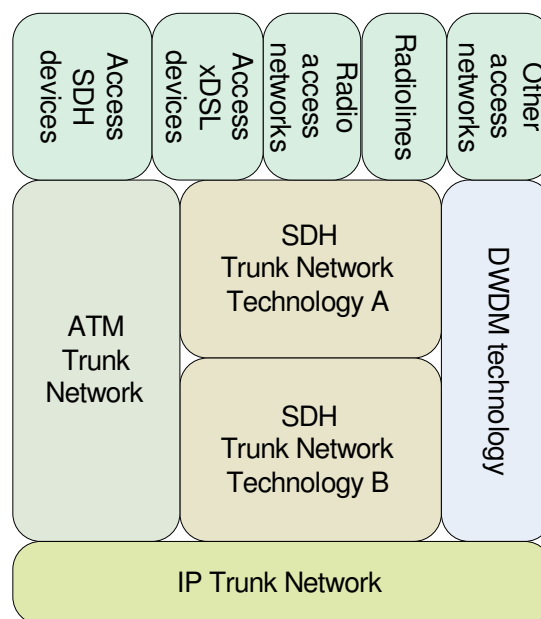


Figure 1 Structure of transmission network

Big trunk networks like SDH, ATM and IP usually are managed by their own Network Management Systems, which have their own databases.

LNI-connector enables LNI users to acquire data from these systems into LNI database and synchronize it periodically. Manual data acquisition and synchronization is impossible because of complexity of data.

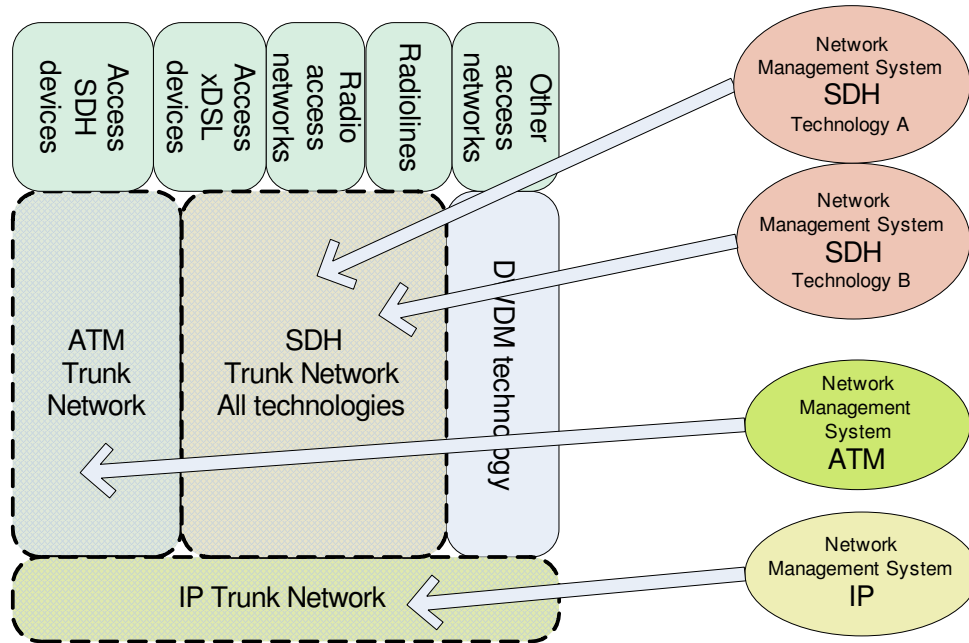


Figure 2 LNI database and Network Management Systems

3. How does it work?

Each Network Management System is supported by a specific data adapter (converter). Data adapter converts data dumped by Network Management System to XML format, accepted by LNI-Connector. Data adapters are external programs.

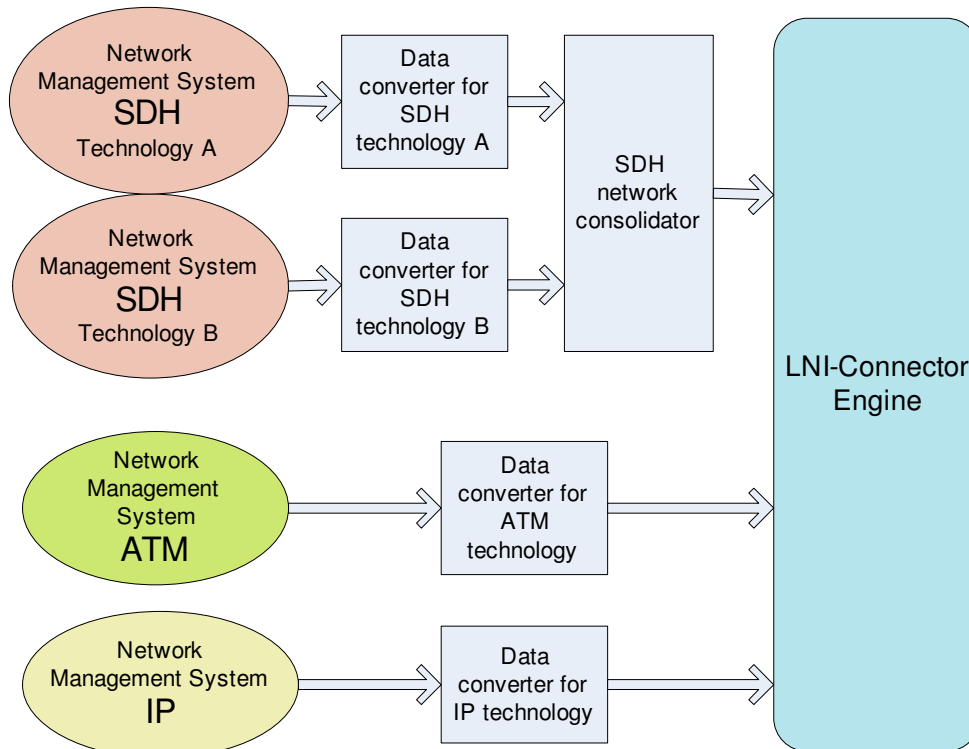


Figure 3 Data adapters

Globema offers some data adapters off-the-shelf, implemented on Microsoft .NET platform, including for instance:

- SDH Alcatel 1354RM
- SDH Siemens TNMS
- SDH Marconi MV38
- ATM Newbridge

LNI-Connector engine compares new NMS data with respective NMS data loaded earlier to LNI database. All differences are shown to LNI data administrator for verification. The verification dialog shows all updates, which LNI-connector is going to make in the LNI database.

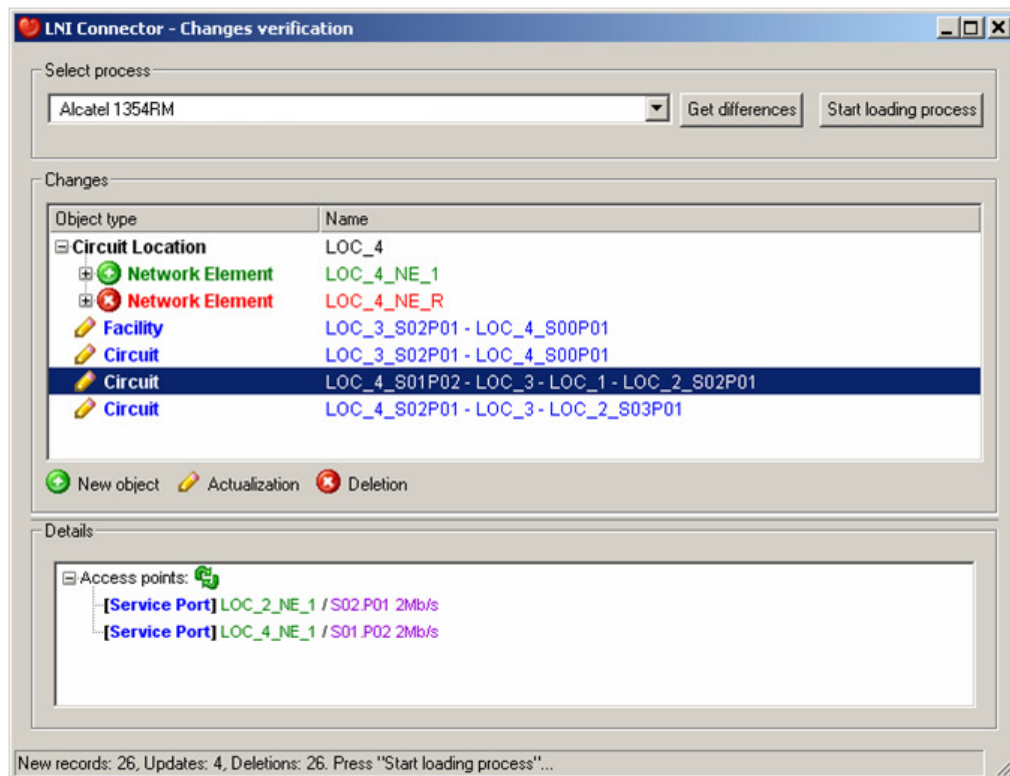


Figure 4 LNI-Connector - verification dialog

After verifying the list of all changes, loading process can be started. The changes are loaded automatically.

Some changes could interact with data entered manually. It is assumed that NMS data has higher priority. In case of a conflict, NMS version is always chosen. Each conflict is stored in the database as a *LNI-Connector issue object*.

4. How to start using LNI-Connector?

LNI-Connector version 1.0 requires.

- Smallworld Logical Network Inventory 4.0
- Globema XML-Connector platform (which could be used for other import and export processes, too)
- Data adapter for every Network Management System

It must be confirmed that each Network Management System is configured properly to dump its data. Usually each NMS is capable of dumping data to a set of text files.

Because of different versions of NMS software and different ways of dumping data, existing (off-the-shelf) data adapters may require some customization to run with a current version of an NMS.

Globema offers implementation of new data adapters for other Network Management Systems.