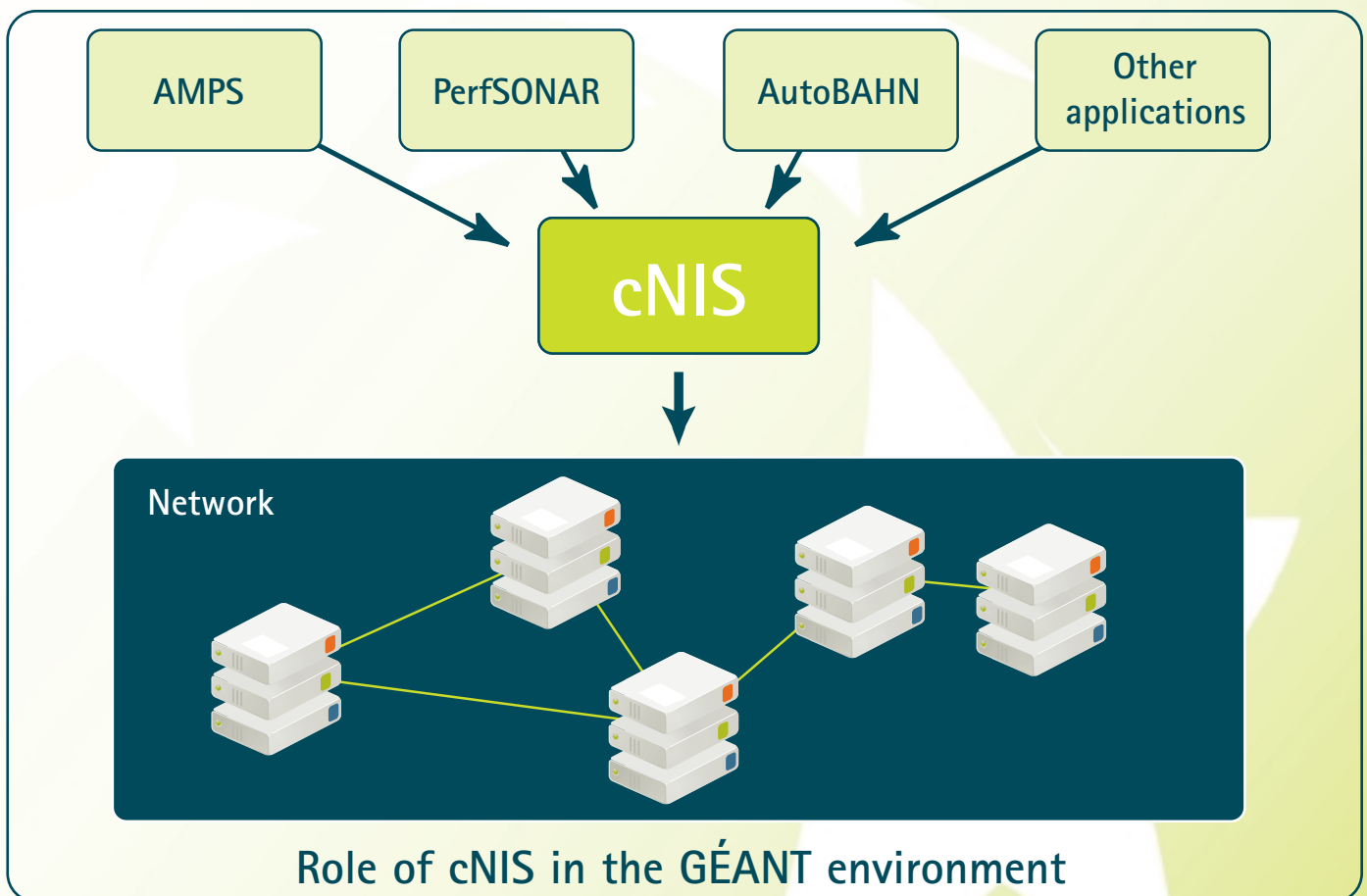


What is cNIS?

The aim of the Common Network Information Service (cNIS) is to provide a unified repository of all relevant network information about a single administrative domain. cNIS is a set of applications and services providing interfaces for topology data discovery, management and exploration.

Genesis

Development of cNIS began in September 2006 as part of the GÉANT2 project (GN2). GÉANT2 was the second generation of the pan-European research and education network. cNIS development will continue in the third generation GÉANT project (GN3). GÉANT is co-funded by the European Commission and Europe's national research and education networks, and is managed by DANTE.

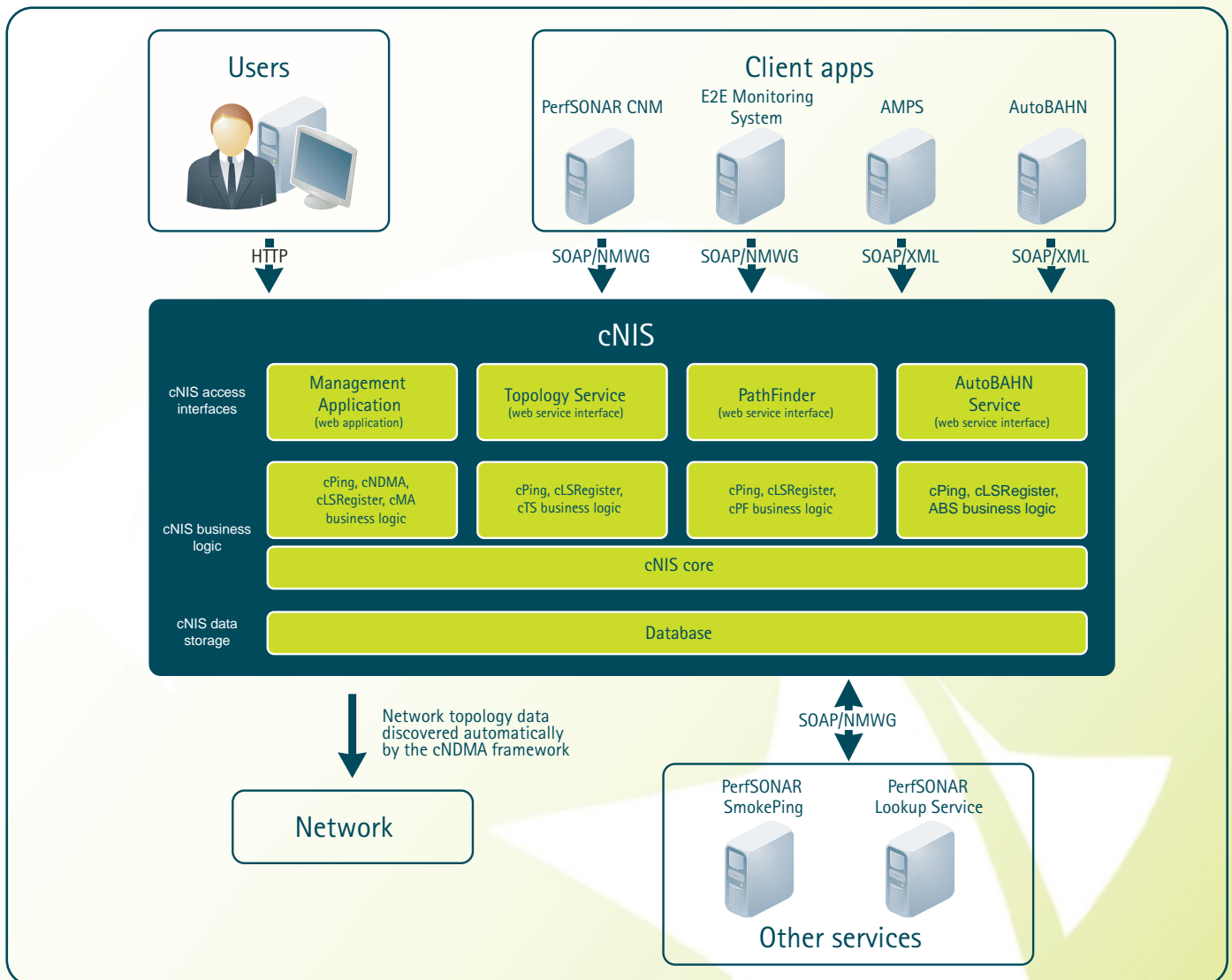


More than a database

cNIS is expected to be the "single point of storage", but it is in fact more than just a database. Apart from the internal functionality required for populating, validating and updating the database, it is equipped with modules for analyzing the topology data and presenting the data in a client-specified format. An example is the 'Path Finder' module, which is able to calculate the path across a domain and 'Topology Service' module, which presents the topology data in the NMWG (XML) format specified by the Global Grid Forum's (GGF's) Network Measurement Working Group.

Network topology discovery

The cNIS is able to store topology data not just for a domain's layer 3 network (IP), but also for lower layers (Ethernet, SDH). Automatic population is a significant feature of the cNIS, since it simplifies the work of network administrators (NRENs and others) and therefore encourages them to deploy the system. As a result, cNIS delivers a mechanism for the automatic discovery of the IP, Ethernet and SDH layer topology.



cNIS Management Application
The aim of the cNIS Management Application (cMA) is to enable end users (cNIS operators in particular) to browse and edit the network topology information.

Moreover the application supports the user with an interactive topology data synchronisation tool and a network topology visualisation panel.

cNIS Topology Service
cNIS Topology Service (cTS) is a web service interface that exposes IP network topology information in the NMVG format.

cTS is compatible with the original perfSONAR's Topology Service module and thereby can be used as an interface between the cNIS and perfSONAR services.

cNIS Pathfinder
cNIS Pathfinder (cPF) is a web service interface implementing functionality for finding paths in the network.

The path-finding functionality was initially embedded in the GN2 SA3 Provisioning System (The Advanced Multi-domain Provisioning System - AMPS).

Now AMPS is using cNIS to calculate the intra-domain path that fulfils requested conditions.

cNIS AutoBAHN Service
cNIS AutoBAHN Service (cABS in short) is a web service interface providing access to the Ethernet and SDH network topology stored in cNIS.

AutoBAHN system retrieves topology data from cABS using a dedicated XML-based language.

The AutoBAHN Services supports topology pruning and partitioning.

Project Participants

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- DFN, Germany
- GRNET, Greece
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