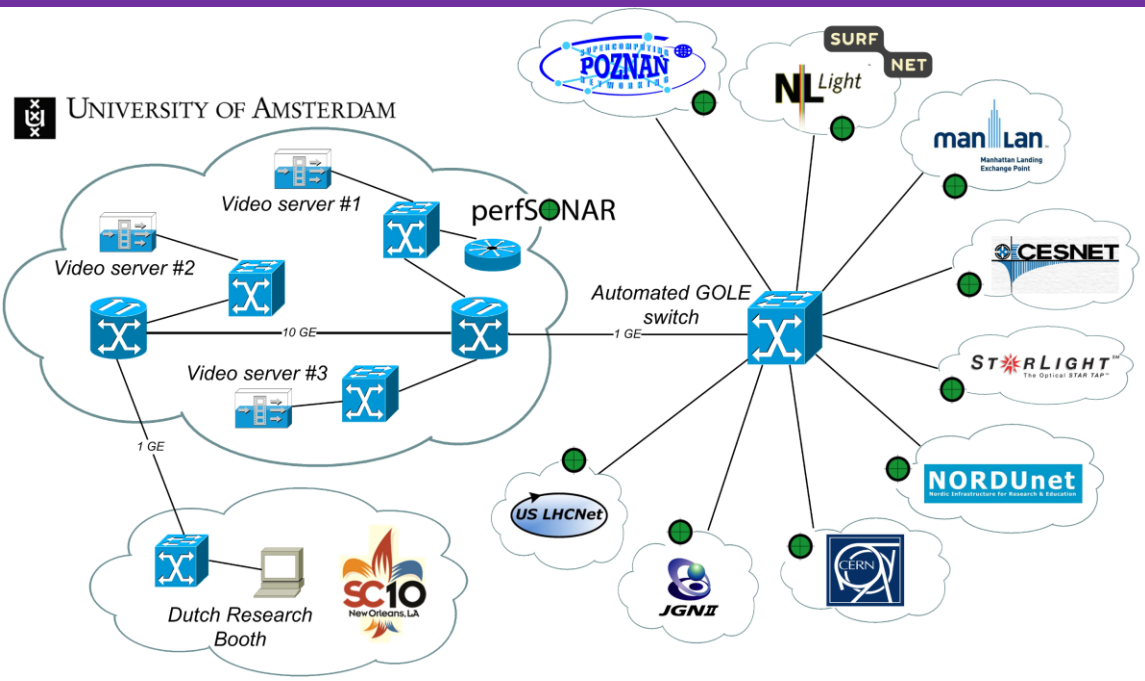
Multi-domain Lightpath Control with the Automated-GOLE Infrastructure



SC10 demo setup. *This demonstration shows the dynamic setup of lightpaths through the Automated-GOLE infrastructure. Each domain has a PerfSONAR instance deployed that signals when domains are connected and is visualized in a pinger-matrix. Additionally, dynamic lightpath setup is demonstrated by connecting to different streamers showing distinct videos.*

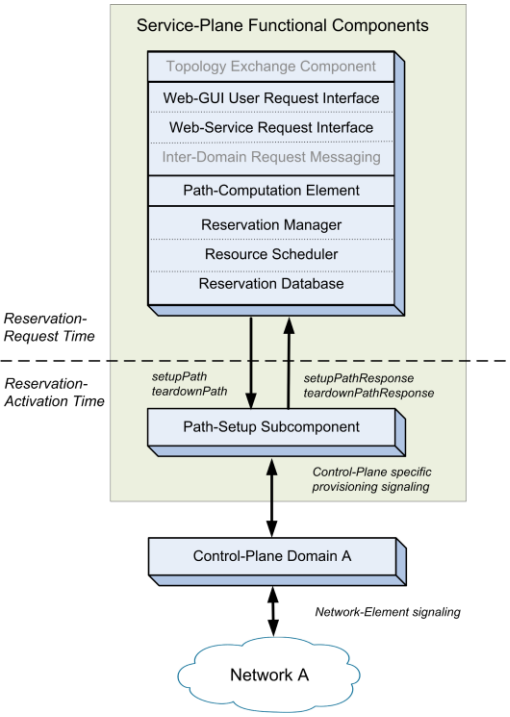
GLIF Open Lightpath Exchanges (GOLEs): locations where lightpaths between multiple NRENs can be set up very effectively.

Network Resource Provisioning Systems (NRPSs) among NREN operators differ, one of the reasons making it impossible for a user to reserve a multi-domain path with a single request.

In the GLIF community, a software architecture has been developed that presents the user with a single request interface for reserving multi-domain lightpaths.

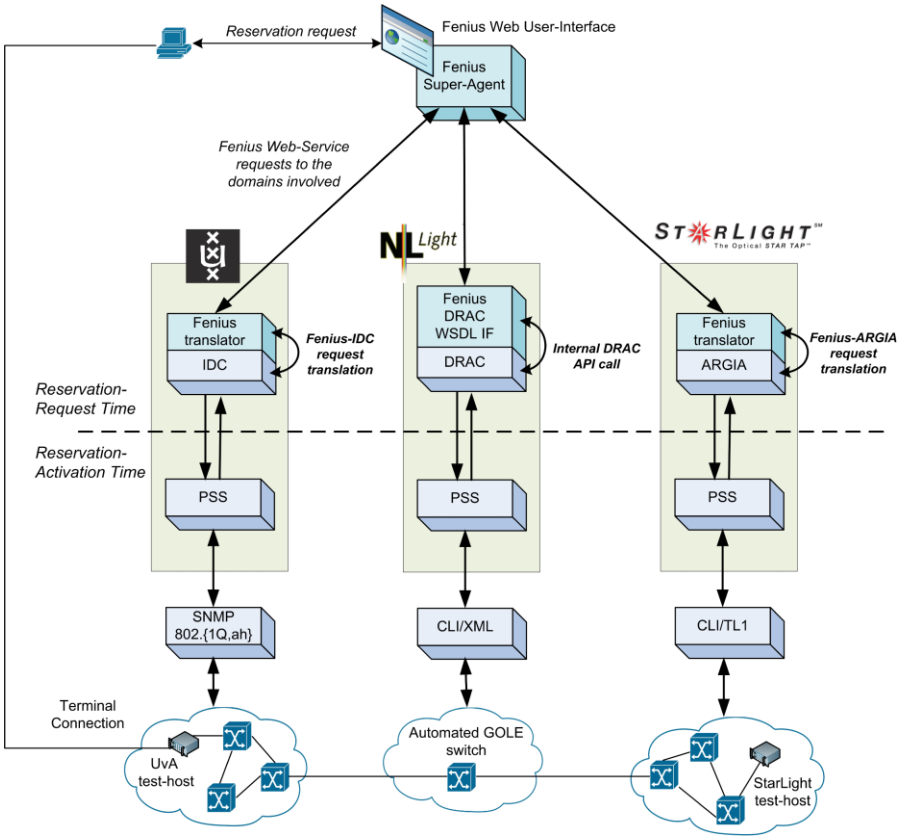
Fenius, the name of this system, translates the request in the formats that the NRPSs of the domains involved require.

The Super-Agent is a component that calculates inter-domain paths, and calls the Fenius translator instances of the domains through which the path traverses.



The functional components of NRPSs. *Fenius is a solution for NRPSs that lack the highlighted inter-domain components. A better solution would be the standardization and integration of these components in NRPSs, enabling the exchange of topology information and status-notifications, and handle inter-domain requests through a common interface.*

In the near future*, NRPSs will move to the pre-standard Network Services Interface of the OGF, soon after to be replaced by full NSI implementations as soon as this emerging open standard has been ratified.*



An example scenario *of the interoperating Fenius – and NRPS systems. In this scenario a request for a path is made from an endpoint in the UvA network to an endpoint in StarLight traversing through the Automated GOLE infrastructure.*

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