Services based on the SPA platform

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Service Provider Architecture and Platform

SPA is a modular blueprint guide for designers and developers that want to build a next generation service management platform by integrating functionalities in a flexible and uniform way.

SPA platform is the implementation of the SPA to orchestrate and automate network services in the GÉANT and NREN network infrastructures.

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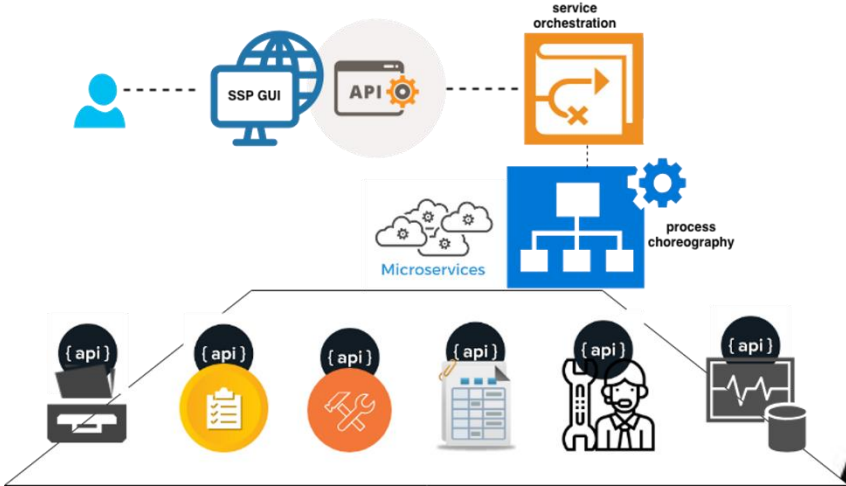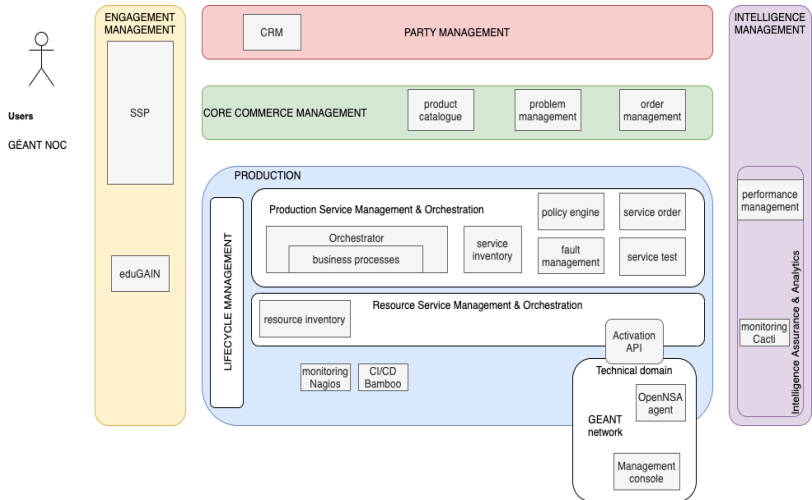
Service Provider Architecture (SPA)

Design a LEGO® type of service architecture
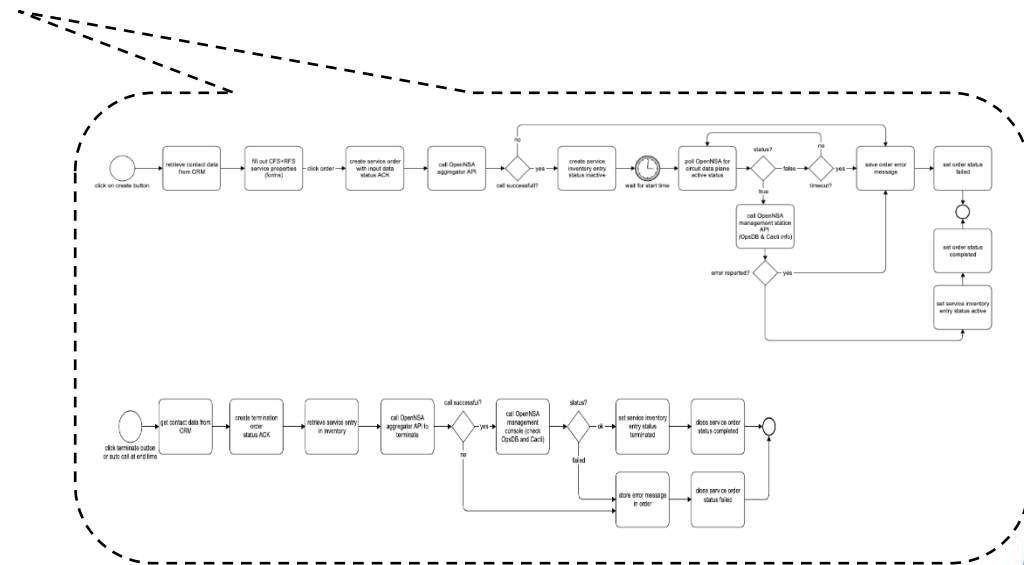
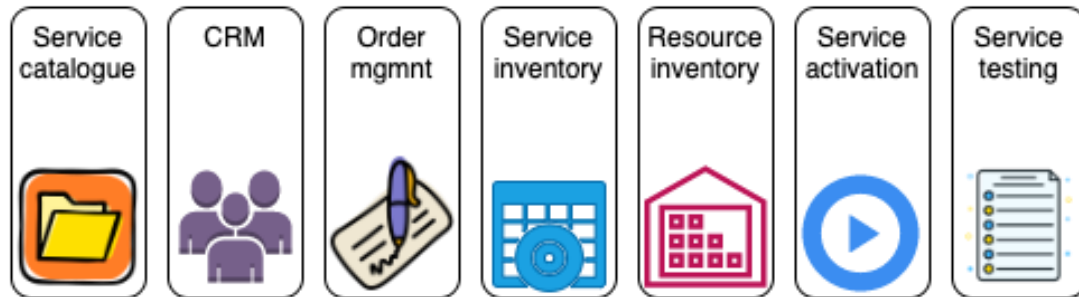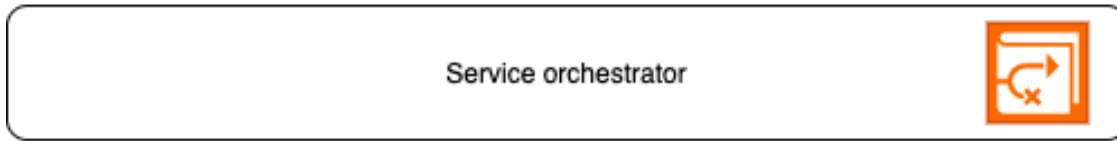Support the service lifecycle of all network services
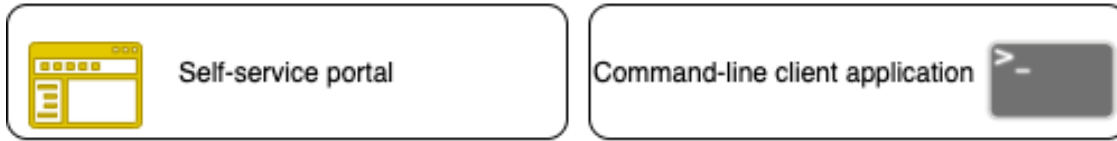
Use automation wherever possible

Orchestration for complex workflows

Common information model

TMF Frameworx compliant

SPA platform

Self-service portal

Command-line client application

Service orchestrator

| Service catalogue | CRM | Order mgmnt | Service inventory | Resource inventory | Service activation | Service testing |

OpenNSA

Network Infrastructure

Services based on SPA

GÉANT Connection Service

E-Line Service in NMaaS

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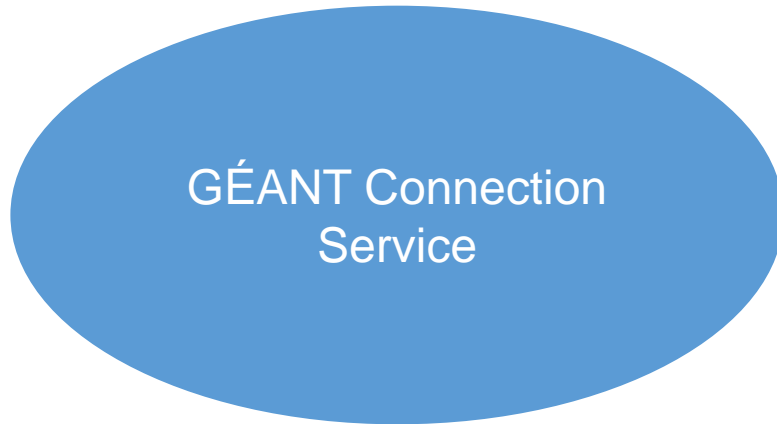
GÉANT Connection Service (GCS)

- Microsoft ExpressRoute point-to-point L2 circuits in the GÉANT infrastructure

- Production service for GÉANT OC

- OpenNSA as the activation component (topology abstraction, access to the infrastructure)

- Continuous improvements
  - New requirements from the GÉANT OC
  - UAT (User Acceptance Test) environment for pre-production tests

33 STPs

40 routers

52 active circuits

187 automated workflows

121 terminated circuits

Service Type	User	Time(UTC)	Status	Conn. ID	Name	3rd party ID	Start(UTC)	End(UTC)	Capacity	Src. STP	Src. VLAN	Dest. STP	Dest. VLAN
Geant E-line	Operations Centre	2019-12-02 10:31:58	active	GC-0ff2428874	BELNET_ExpressRoute_Vlan4080	SKEY:c34e3b9c-b79f-44ef-958b-b8c0354e1115	2019-12-02 10:30:58	None	0	1-ams-nl.gcs.geant.net_2019_topology:belnet-ap3-expressroutes	4080	1-fra-de.gcs.geant.net_2019_topology:ms_express_route_1	2
Geant E-line	Operations Centre	2019-12-02 10:30:47	active	GC-7b6b96a6f5	BELNET_ExpressRoute_Vlan4081	SKEY:c34e3b9c-b79f-44ef-958b-b8c0354e1115	2019-12-02 10:29:11	None	0	1-lon-uk.gcs.geant.net_2019_topology:belnet-ap2-expressroutes	4081	1-fra-de.gcs.geant.net_2019_topology:ms_express_route_2	2

E-Line Service in NMaaS

- Sandbox for testing L2 point-to-point connection service
  - All SPA components with default test settings
  - OpenNSA with simple emulated network topology
  - All service lifecycle actions

- No need to deploy the service on your own resources
  - Only an account in NMaaS is needed
  - User creates an instance of the service for testing

- SPA in NMaaS may help to familiarize with the OAV concept and the available SPA implementation (start of the orchestration and automation journey)

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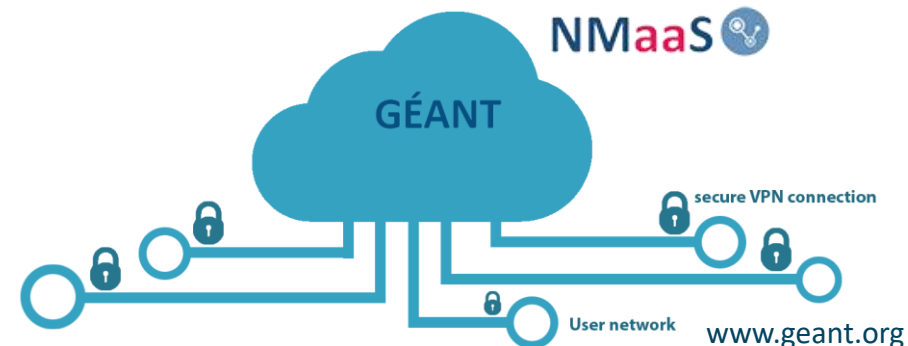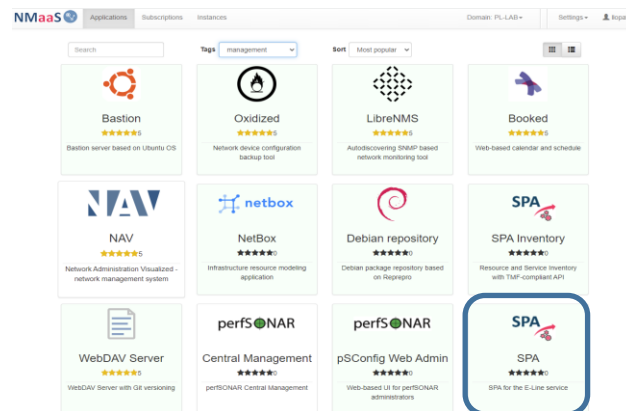
Single Point of Truth for the orchestration and automation framework

- New version 3 of the Resource and Service Inventory

- OpenAPI 3.0 schema validation for the REST API
  - Any data model described by the schema can be supported

- REST API compliant with TMF OpenAPI specs (verified with the test suites from TMF)

- Flexible for data model extensions and updates (NoSQL database)

- REST API OAuth 2.0 Authentication with Keycloak

- Upcoming: a series of tests in the PIONIER network
  - SPoT - one of the key components for the work on automation of resource and service configuration

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https://wiki.geant.org/display/NETDEV/SPA

Thank you