Sovereign
Cloud Stack

gaia-x

Welcome to the
1st SCS Community Summit

Eduard Itrich, Dirk Loßack, Kurt Garloff, Manuela Urban
Rafael Laguna de la Vera (Bundesagentur für Sprunginnovationen)

2021-12-15

OSB Open Source Business
ALLIANCE
Bundesverband für digitale Souveränität e.V.

The Sovereign Cloud Stack Project: From Idea to Realisation

Kurt Garloff

Dirk Loßack

Oliver Mauss

Peter Ganten

Christian Berendt

(2020-07, SPRIN-D photo shooting @ PlusServer DC)

The vision:

„A collaborative and federated cloud infrastructure for Europe – based entirely on open source."

Rafael Laguna de la Vera (SPRIN-D), Oliver Mauss + Stephan Ilaender (PlusServer),
Peter Ganten (OSBA),
Jens-Gero Boehm + Mario Ester (SUSE), Kurt Garloff

Invitation to present @ BMWi

Visit Gaia-X WS2 meeting

Rafael Laguna de la Vera (SPRIN-D), Oliver Mauss (PlusServer), Dirk Loßack, Kurt Garloff, Peter Ganten (OSBA), Alfred Schröder (Gonicus)
Ralph Müller (Eclipse), Frank Karlitschek (Nextcloud), Rainer Sträter (IONOS)

Motivation & Goals

Digital Sovereignty

- Digital Sovereignty is defined by the ability to act and take decisions in a self-determined way in the digital space.

- Digital Sovereignty of a state or an organisation necessarily encompasses the complete control over stored and processed data as well as the independent decision who is granted access to it.

- Digital Sovereignty is an indispensable precondition to independent governmental or economic action. It supports efficiency, competition, agility and the ability to deal with risks.

  (translated from the German Digital Summit - 2019: Digitale Souveränität im Kontext plattformbasierter Ökosysteme / digital sovereignty in the context of platform-based ecosystems)

Processing data in a sovereign way requires the ability to use sovereign infrastructure

- Compute, Storage, Network infrastructure under the control of the organisation or a service provider of their choice fulfilling their regulatory and strategic needs.

- Network effects lead to natural monopolies/oligopolies (platform ecosystem economy) which reduce choice.

- Sovereign Cloud Stack (SCS) wants to combine standard open source technologies to enable many organisations and service providers to offer a federated cloud/container infrastructure platform.

- The platform needs to be a federated, secure, dynamic, self-service infrastructure, enabling users to work according to modern Infrastructure-as-Code / DevOps methodologies.

- A healthy ecosystem of providers simplifying access to standardized compliant modern infrastructure is the underpinning of a vibrant data ecosystem and an enabler to build innovation with digital solutions and business models.
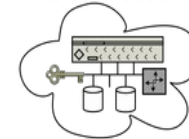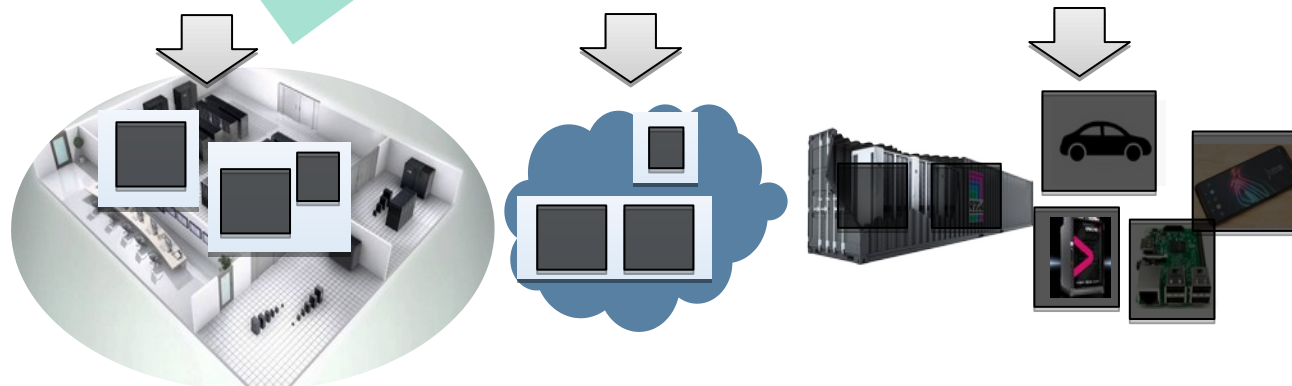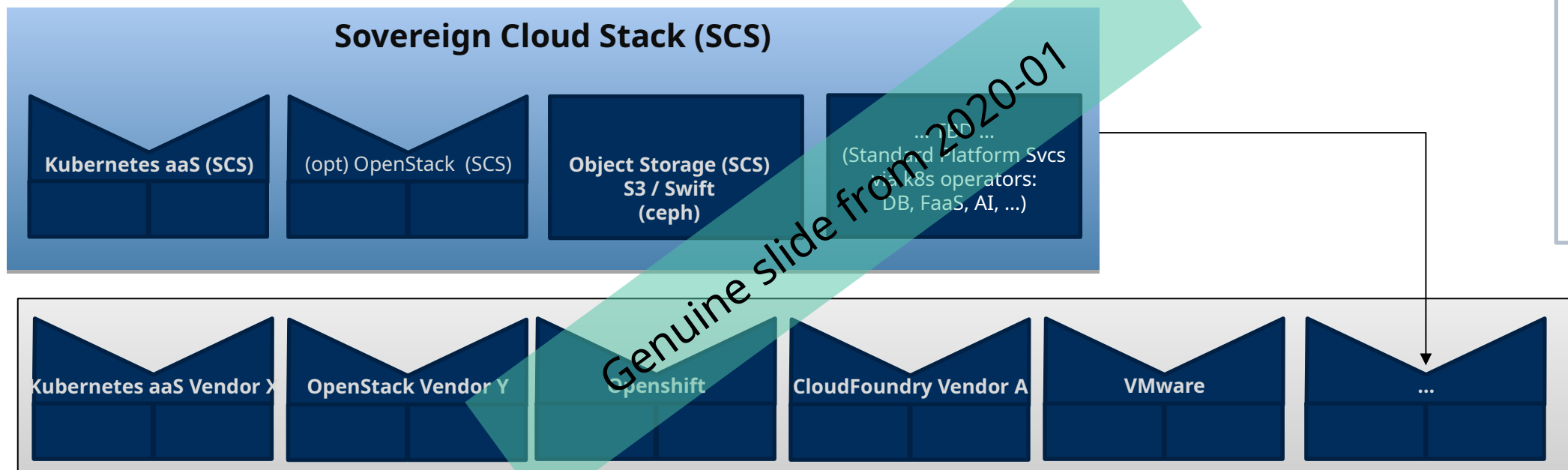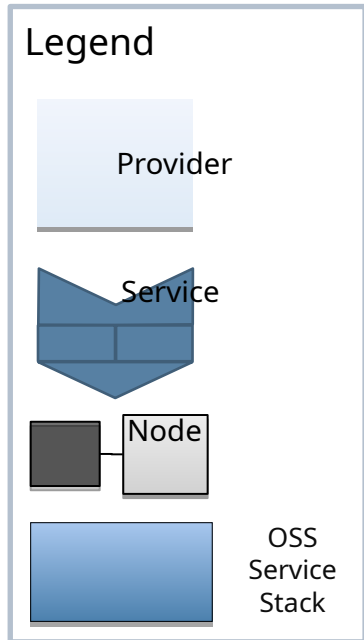
Genuine slide from 2020-01

Present @ Architecture Board Gaia-X

Accepted as sub-WG 1.4 to WS2

Should an OSS Base Cloud Stack (SCS) be part of GAIA-X?

- The Sovereign Cloud Stack (SCS) Project implements and thus validates and evolves the requirements of the node / base-service self-descriptions
- SCS consists of freely available OSS reference implementations which in combination offfer a certifiable, secure, usable, federated Gaia-X node / base infra stack, allowing IT departments and IaaS/CaaS providers to provide interoperable and federated Gaia-X compliant base stacks relatively easily
- SCS provides concrete APIs for infrastructure deployment automation (Infrastructure as Code for DevOps)
- SCS is expected to enable velocity for the higher layers (AI and data layer)

Sovereign Cloud Stack (SCS)

Kubernetes aaS (SCS)

(opt) OpenStack (SCS)

Object Storage (SCS) S3 / Swift (ceph)

... TBD ... (Standard Platform Svcs + k8s operators: DB, FaaS, AI, ...)

Genuine slide from 2020-01

Kubernetes aaS Vendor X | OpenStack Vendor Y | Openshift | CloudFoundry Vendor A | VMware | ...

Legend

Provider

Service

Node

OSS Service Stack

Bundesministerium für Wirtschaft und Energie
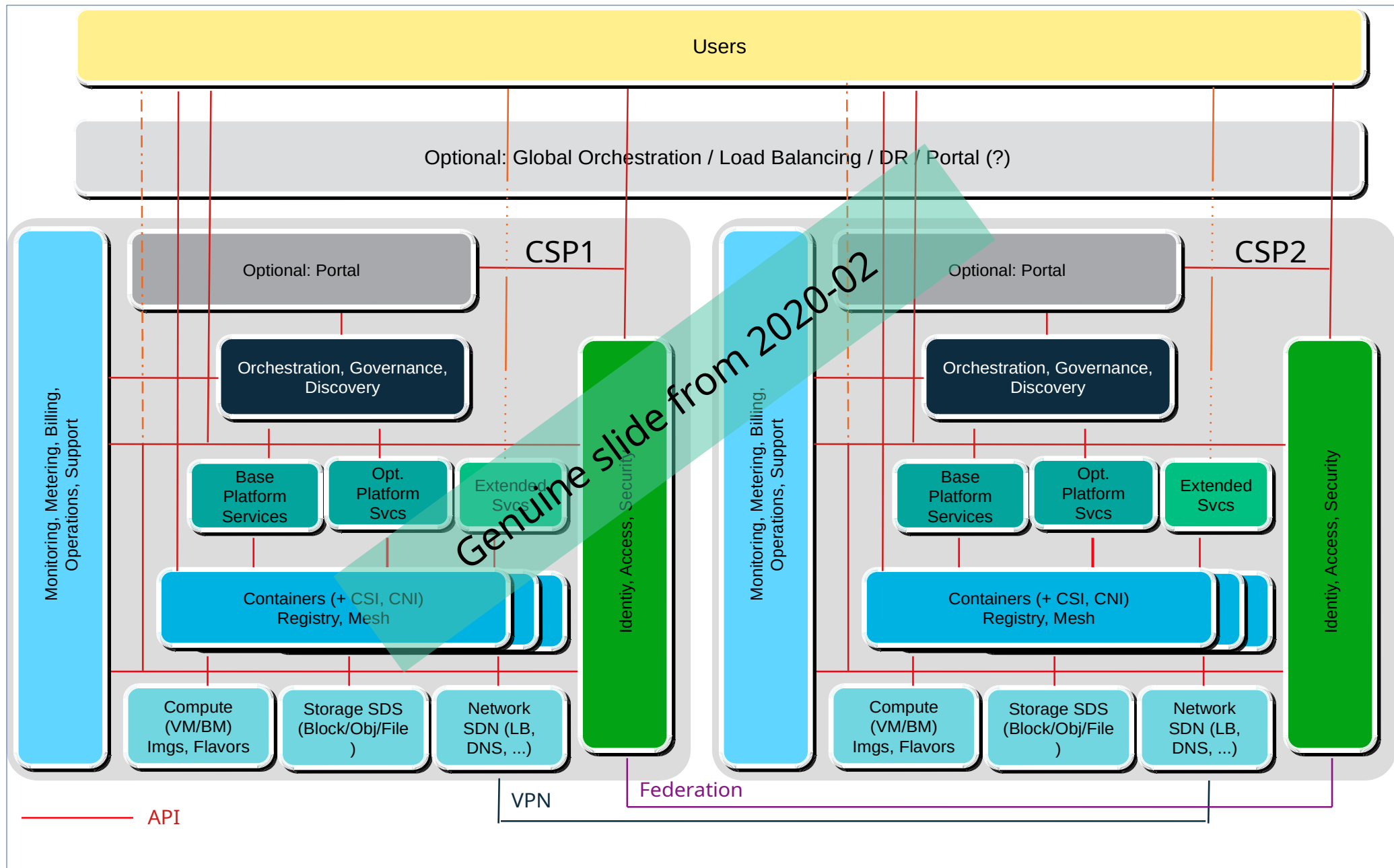
Sovereign Cloud Stack

Architecture Workshop in Cologne

~15 participants
PlusServer, Betacloud, T-Systems, IONOS, SUSE, teuto, OX, ...

Start building community

Architecture & Components (preliminary)

Sovereign Cloud Stack

Users

Optional: Global Orchestration / Load Balancing / DR / Portal (?)

CSP1

Optional: Portal

Orchestration, Governance, Discovery

Monitoring, Metering, Billing, Operations, Support

Base Platform Services

Opt. Platform Svcs

Extended Svcs

Identity, Access, Security

Containers (+ CSI, CNI) Registry, Mesh

Compute (VM/BM) Imgs, Flavors

Storage SDS (Block/Obj/File)

Network SDN (LB, DNS, ...)

CSP2

Optional: Portal

Orchestration, Governance, Discovery

Monitoring, Metering, Billing, Operations, Support

Base Platform Services

Opt. Platform Svcs

Extended Svcs

Identity, Access, Security

Containers (+ CSI, CNI) Registry, Mesh

Compute (VM/BM) Imgs, Flavors

Storage SDS (Block/Obj/File)

Network SDN (LB, DNS, ...)

VPN

Federation

API

Genuine slide from 2020-02

- **Sovereign Cloud Stack (Gaia-X / OSBA)**

The German Federal Agency for Disruptive Innovation (SPRIN-D) funds a proof of concept study.

Photo shooting, first PR work.

Start of DE+FR Gaia-X entity founding discussions.
(PlusServer participating)

SCS entity funding considerations (OSS startup? Foundation/Collaborative? Public funding @ OSBA?)

2020

Technical development (kolla-ansible, OSISM)

citynetwork, OVH, … joining
Gonicus, Univention contributing

OIF summit, Open Source Day, …
iX article

Launch of pluscloud open (2020-12)

2020-12-23

Funding request submitted to the German Federal Ministry for Economic Affairs:

"Sovereign Cloud Stack – Ein offener, souveräner, föderierbarer Infrastrukturstack für GAIA-X"

Planned start: 2021-02-01

Vorhabenbeschreibung

(zur vertraulichen Behandlung)

Gefördert durch:

Bundesministerium für Wirtschaft und Energie

aufgrund eines Beschlusses des Deutschen Bundestages

Zum Projekt GAIA-X

GAIA-X

Vorhaben: Sovereign Cloud Stack
Akronym: SCS

Sovereign Cloud Stack

Schlagworte zum Vorhaben:

GAIA-X, SCS, Digitale Souveränität, Infrastruktur, Cloud, Föderierung, Open Source, Infrastructure as Code, OSB Alliance

Antragsteller:

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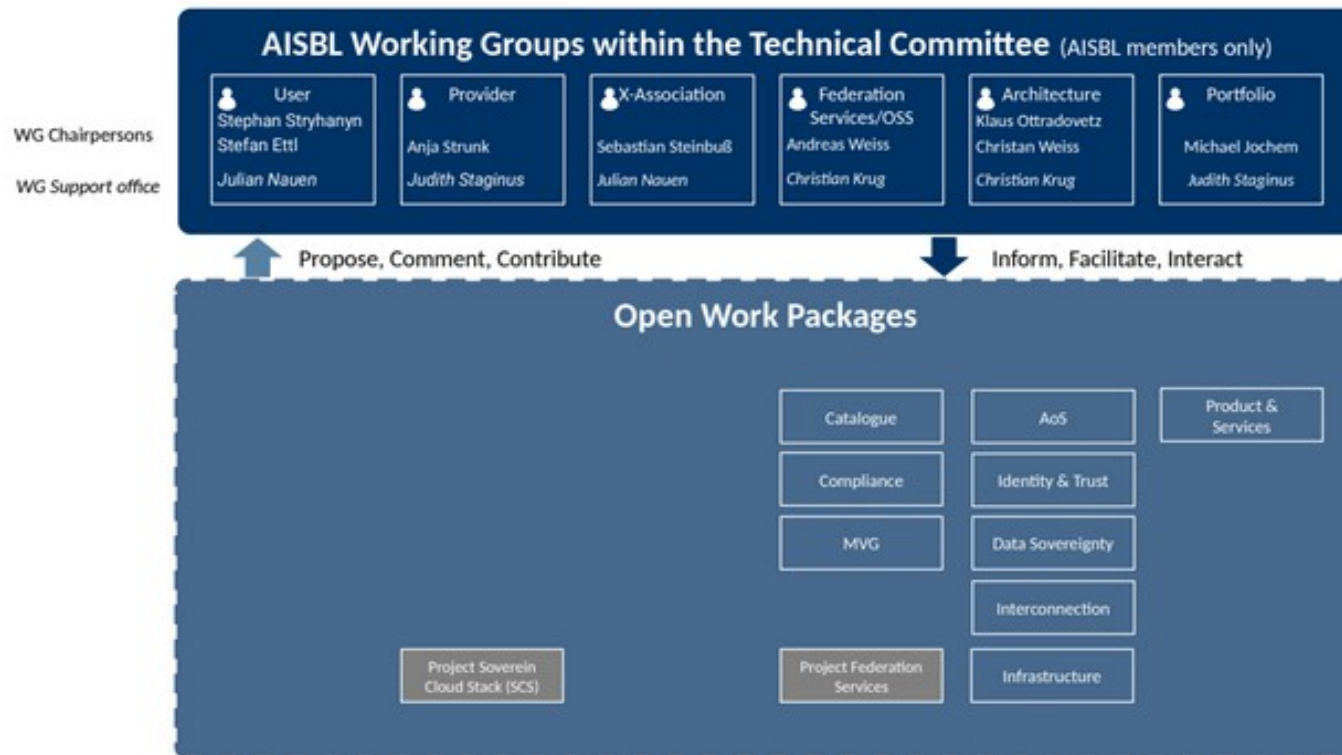Peter Ganten (Vorstandsvorsitzender)
E-Mail: ganten@osb-alliance.com

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Version: 2020-12-21

SCS becomes an Open Work Package attached to the Tech Committee's *Working Group Provider* in Gaia-X.

Non-binding funding promise by the Federal Ministry, retroactive to March 1.

OSB Alliance starts setting up the project.

Growing the community

+ StackHPC, gridscale, TNO, 23technologies, dataport, …

Funding decision delayed and delayed :-(

Losing candidates :-((

Risk taking by candidates

Risk taking by OSBA: Hiring core team
(Dirk, Kurt, Manuela, Eduard)

2021-06-30

Funding commitment of € 14.9 million until 2024-09 for SCS project @ OSB Alliance.

The project starts officially!

Press release

Release 0 (2021-07-15)

**Gaia-X membership of OSBA
Co-heading Provider Working Group**

Partnership with OpenInfra Foundation

SCS R1 released

Sovereign Cloud Stack
October 05, 2021

After R0 has been released in July and focused on the installation of a test environment, the release R1 of Sovereign Cloud Stack was released last Wednesday, 2021-09-29.

The newest release R1 includes the OpenStack Wallaby Release, Kubernetes version v1.21.x, and the Kubernetes Cluster API version v0.4.

The full release notes including technical details can be found in the central docs repository of the SCS project on GitHub.

SCS run
#Running Freedom '21

- **SCS becomes a member of the GREEN-CIS consortium.**

- **GREEN-CIS is selected as a national project to take part in the EU Matchmaking for an IPCEI-CIS („Important Project of Common European Interest – Cloud Infrastructure and Services").**

2021-09 and 12

- **SCS participating in both Gaia-X Hackathons**

- **Successfully validating SCS K8s aaS architecture & implementation**

- **Setting up SCS environments on Bare Metal and creating Self-Descriptions (Hack#2)**

2021, December

Cloud services based on Sovereign Cloud Stack

BETACLOUD

OPEN+

Supporting companies and organizations

23|Technologies

B1 SYSTEMS

SPRIN-D

Bundesministerium für Wirtschaft und Energie

citynetwork

CLOUD & HEAT

dataport

dilossacon

GONICUS
PIONEERS OF OPEN SOURCE

gridscale

LEITWERK
Die Zukunft Ihrer IT

Open Infrastructure FOUNDATION

OSB Open Source Business ALLIANCE
Bundesverband für digitale Souveränität e.V.

OX Stay Open.

OSISM

OVHcloud

plusserver

Stackable

StackHPC

univention
be open

THANK YOU

We have developed SCS and managed two releases!

Gaia-X Community: Great individuals

SPRIN-D: Support & Funding
BMI: Support, BMWi: Support, Funding

Great staff: Commitment, risk taking

OSBA: Support, trust, risk

Supporting companies (infrastructure, engineers, marketing)

Community: We would be nowhere without you!

Thank you all for believing in our idea, supporting our project, and contributing to the Sovereign Cloud Stack!

Without you, none of this would have been possible.