

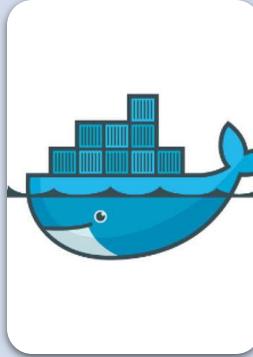
# Hackfest #4: Network Discovery and Inventory Management with TeraFlowSDN

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Oscar González de Dios, Pablo Armingol,  
Juan Carlos Caja (TID)

# ETSI TeraFlowSDN 101

# Do we need YET another Transport SDN controller?



Cloud-native SDN controller for supporting future networks beyond 5G.

Hosted by ETSI and based on results of the European Union-funded TeraFlow 5G PPP research project.

Micro-services architecture provides key benefits:  
Scalability, Self-healing, Integrity

'Toolbox' for ETSI groups working on network transformation.

Supports use cases such as autonomous networks, inter-domain, and cybersecurity.

Enables the alignment of multi-SDO goals and helping to accelerate standardization cycles.

ETSI TeraFlowSDN to serve as reference implementation for Telecom Infra Project

The source code of TeraFlowSDN is publicly available under the Apache Software License.

# ETSI TeraFlowSDN: A growing community

- Members



consorzio nazionale  
interuniversitario  
per le telecomunicazioni



- Participants (Non-ETSI members)



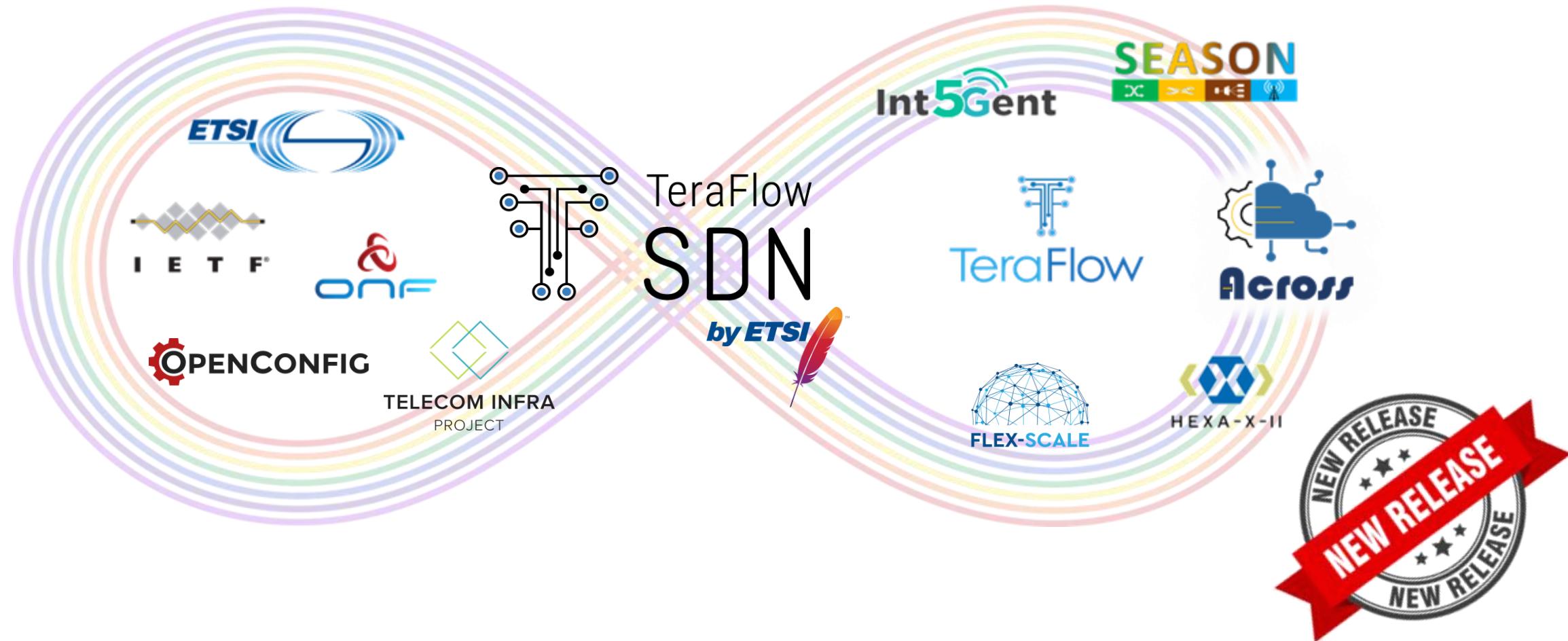
Politechnika Warszawska



<https://portal.etsi.org/TB-SiteMap/TFS>List-of-TFS-Members-and-Participants>

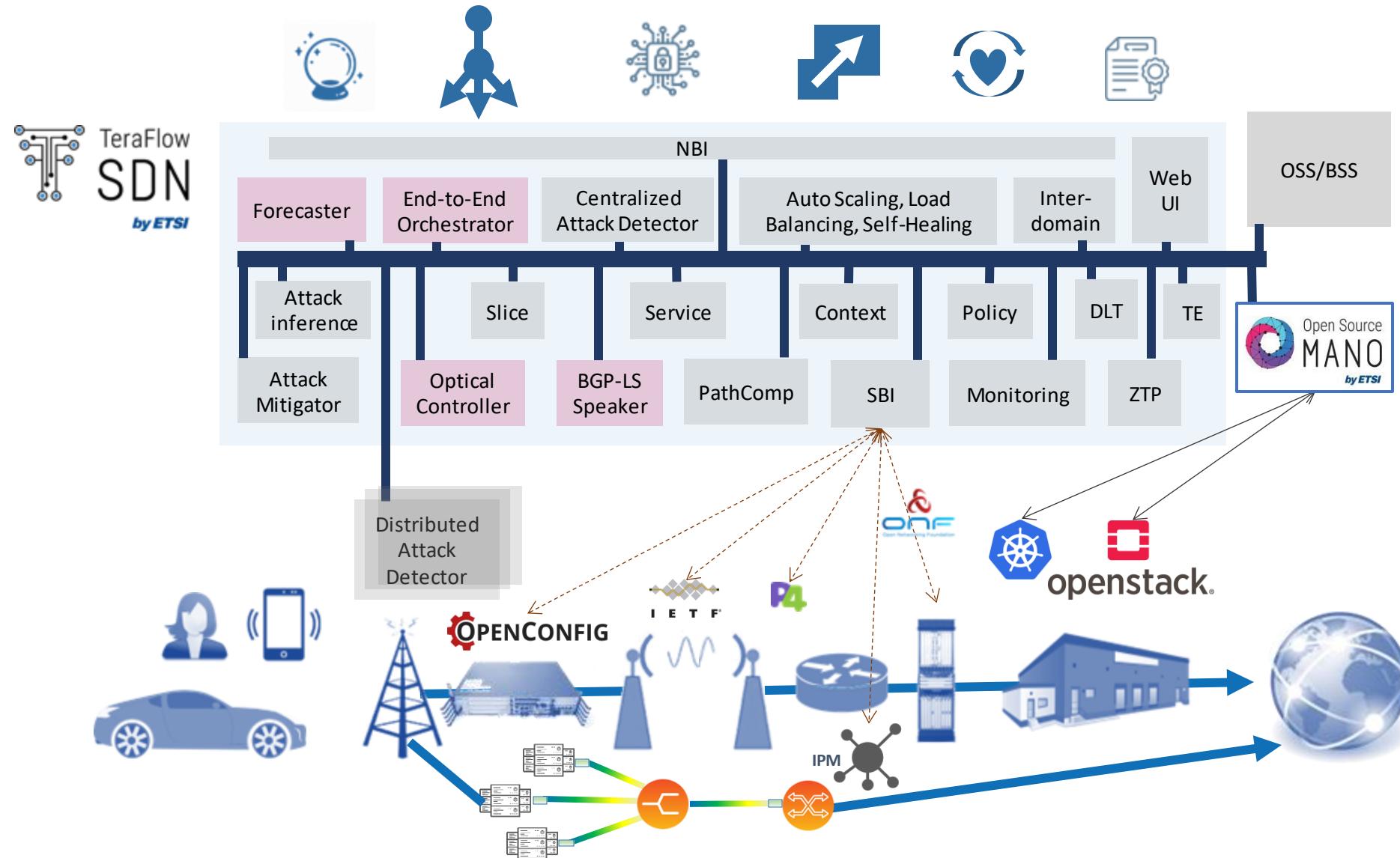


# TeraFlowSDN Release 3



[https://tfs.etsi.org/news/20240430\\_tfs\\_release\\_3/](https://tfs.etsi.org/news/20240430_tfs_release_3/)

# TFS Release 3 Architecture



# Interfaces Supported

NBIs<sup>(1)</sup>:

- TFS API
- ETSI MEC Bandwidth Management API
- IETF L2-VPN Service Delivery [RFC8466]
- IETF L3-VPN Service Delivery [RFC8299]
- IETF Network Topology [RFC8345]
- IETF Network Slice Service [draft]



SBIs<sup>(2)</sup>:

- Emulated
- NetConf/OpenConfig
- gNMI/OpenConfig
- ONF Transport API
- P4
- Infinera IPM XR
- IETF L2-VPN Service Delivery [RFC8466]
- IETF ACTN (basic support)
- Optical TFS
- MicroWave [ONF TR-352]



(1) <https://labs.etsi.org/rep/tfs/controller/-/wikis/6.-Supported-NBIs>

(2) <https://labs.etsi.org/rep/tfs/controller/-/wikis/5.-Supported-SBIs-and-Network-Elements>

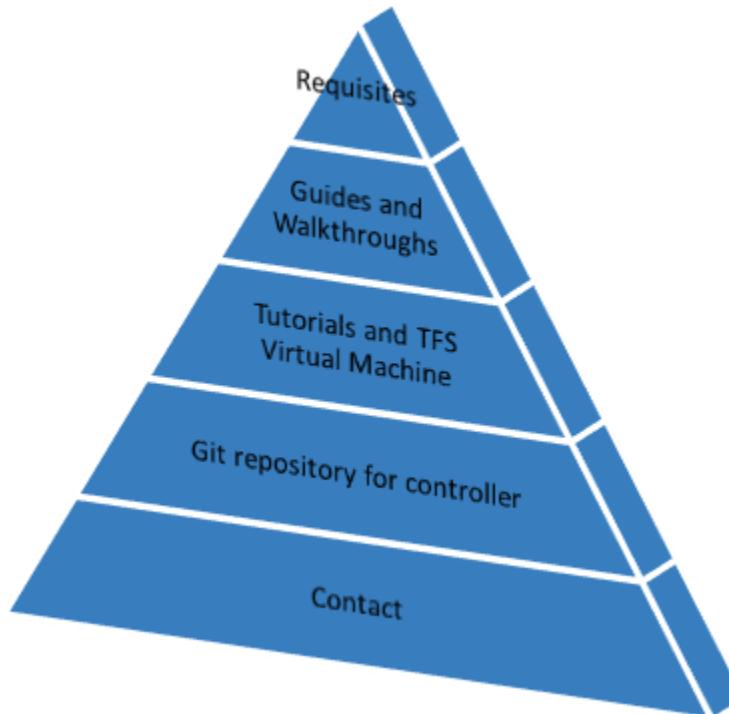
# Demos and Use Cases

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- ETSI OpenSourceMANO and ETSI TeraFlowSDN integration
- Unsupervised Anomaly Detection Loop for Optical Networks
- Transport Network Slicing with SLAs
- Slice Grouping for Transport Network Slices
- Hierarchical Multi-domain SDN Controllers
- Scalable and Efficient Pipeline for ML-based Optical Network Monitoring
- DLT-based End-to-end Inter-domain Transport Network Slice with SLA Management
- Event-Driven Policy Framework for P4-Based Traffic Engineering
- TeraFlowSDN as an Optical SDN Controller
- DataPlane-in-a-box with ContainerLab



# Our single point of entry: <https://tfs.etsi.org>



EuCNC (<https://www.eucnc.eu/>):

- 3-6 June 2024, Antwerp (Belgium)
- Special Session 6: Open Source for bridging Research and Standardization

ETSI SDG TFS kick-off:

- 19 June 2024, Online

ETSI Conference & Hackfest – [Save the date!!](#)

- 12-15 November, Sophia Antipolis (France)
- Software and Standards for Smart Networks and Services



# Are you ready?

