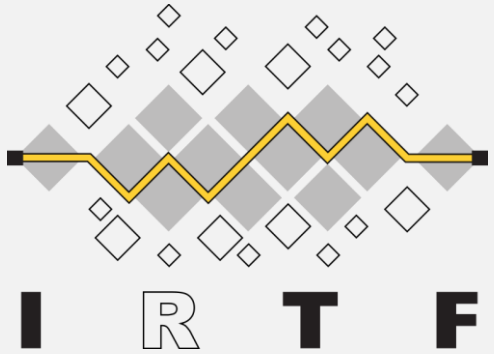

An Evolution of Cooperating Layered Architecture for SDN (CLAS) for Compute and Data Awareness

draft-contreras-coinrg-clas-evolution-02

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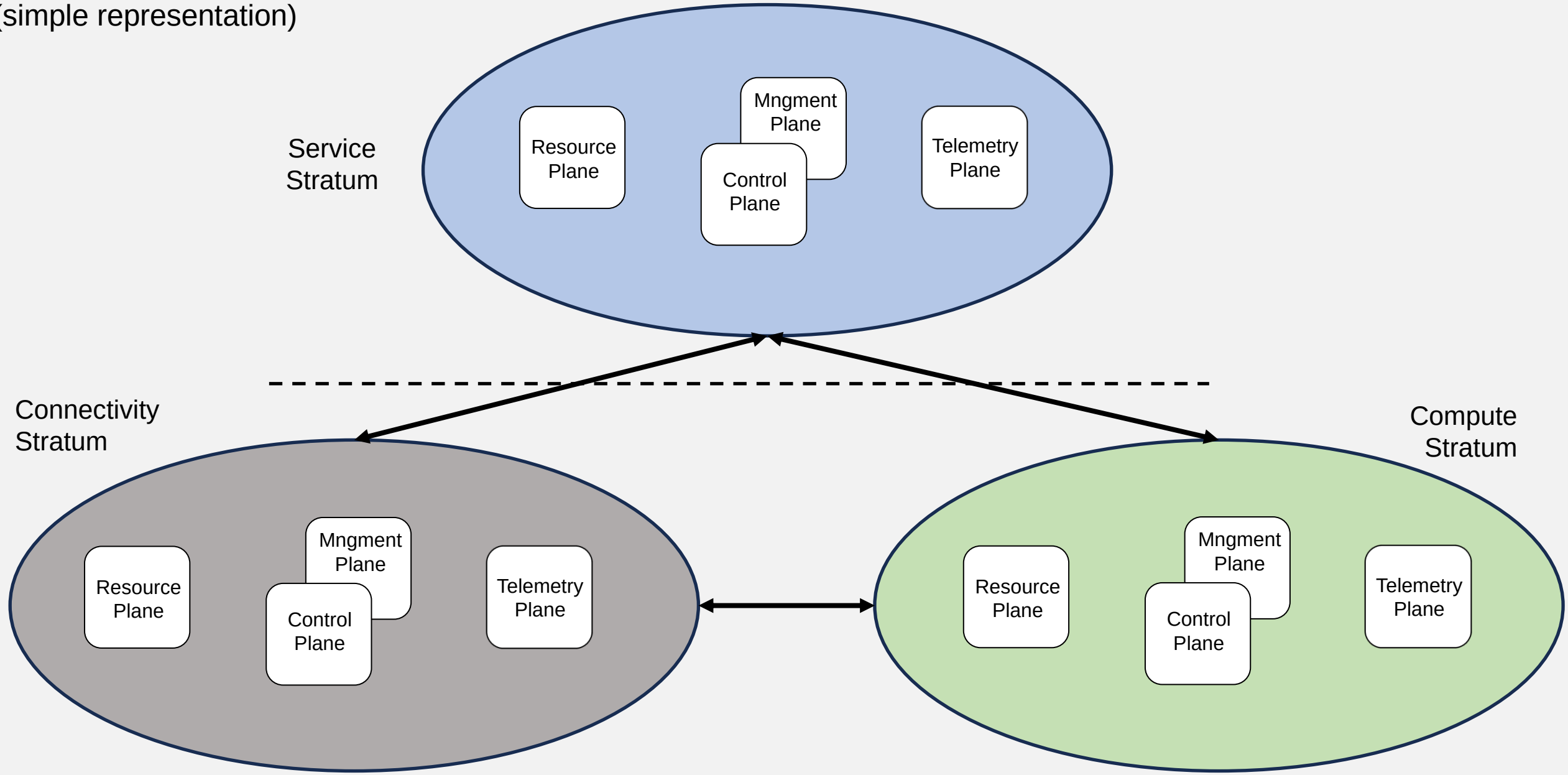
Background

- Cooperating Layered Architecture for Software-Defined Networking (CLAS) [RFC8597] proposes a layered control architecture where control functions associated with transport are differentiated from those related to services
- This draft proposes to augment CLAS by adding:
  - A **new stratum for Compute**, considering distributed computing capabilities attached to different points in the network
  - A **new plane** in all the strata, conceived **to deal with stratum-related data** that could permit the implementation of control-loop automation per stratum
- Draft already presented at IETF 116 and 117

Evolved CLAS Architecture
(simple representation)



Changes from -01

- Renaming “telemetry plane” in -01 (previously “learning plane” in -00) to “data analysis plane”
- Added a simple figure for illustrating that there is no hierarchical relationship among connectivity stratum and compute stratum
- Added a section for documenting possible means of communication between strata (and planes)
  - Initially only communication between strata are documented
  - See next slide

Communication between strata

- Communication between Applications and Service Stratum
  - Connectivity Provisioning Negotiation Protocol (CPNP) [RFC8921]
  - Interconnection Intents [I-D.contreras-nmrg-interconnection-intents]
  - Slice intent [I-D.contreras-nmrg-transport-slice-intent]
  - Selection of proper edge for service placement [I-D.contreras-alto-service-edge]
  - Composition of service function chains [I-D.lcsr-alto-service-functions]
- Communication between Service Stratum and Connectivity Stratum
  - Framework for Automating Service and Network Management [RFC8969], as well as the models referenced there
  - IETF Network Slice Service model [I-D.ietf-teas-ietf-network-slice-nbi-yang]
  - Service function aware TE topology model [I-D.ietf-teas-sf-aware-topo-model]
- Communication between Service stratum and Compute Stratum
  - Data Center aware TE topology model [I-D.llc-teas-dc-aware-topo-model]
  - Cloud-based solutions (e.g., Kubernetes)
- Communication between Connectivity stratum and Compute stratum
  - Traffic steering with service function awareness (work in progress in CATS WG)

Next steps

- Add more deployment/use cases aligned with RG focus
- Request RG adoption