



IntelSat - Automation Journey

*Service Orchestration for
IntelSatOne Infrastructure & Managed Services*

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Safe Harbor

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Unless otherwise indicated, all references to Adjusted EBITDA or AEBITDA and related margins, are to Intelsat S.A.’s Adjusted EBITDA as reported by Intelsat S.A. in its public filings with the SEC. Adjusted EBITDA is not a measure of financial performance under U.S. GAAP and may not be comparable to similarly titled measures of other companies. Adjusted EBITDA should not be considered as an alternative to operating income (loss) or net income (loss) determined in accordance with U.S. GAAP, as an indicator of our operating performance, as an alternative to cash flows from operating activities determined in accordance with U.S. GAAP, as an indicator of cash flows, or as a measure of liquidity.

Refer to Appendix for a reconciliation of Net Income to EBITDA and Adjusted EBITDA (or AEBITDA herein).

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Intelsat Provides Mission-Critical Communications Infrastructure



Network Services

Mobility

- In-flight broadband services for aviation
- Maritime broadband
- Connected car
- Internet of Things (IoT) and Machine-to-Machine



Enterprise and Wireless

- Fixed and wireless networks 2G/3G/4G/5G
- Private corporate networks supporting offshore and globalized businesses
- Broadband for remote communities



Media

- Direct-to-home TV
- Distribution of television programming
- Worldwide event broadcasting

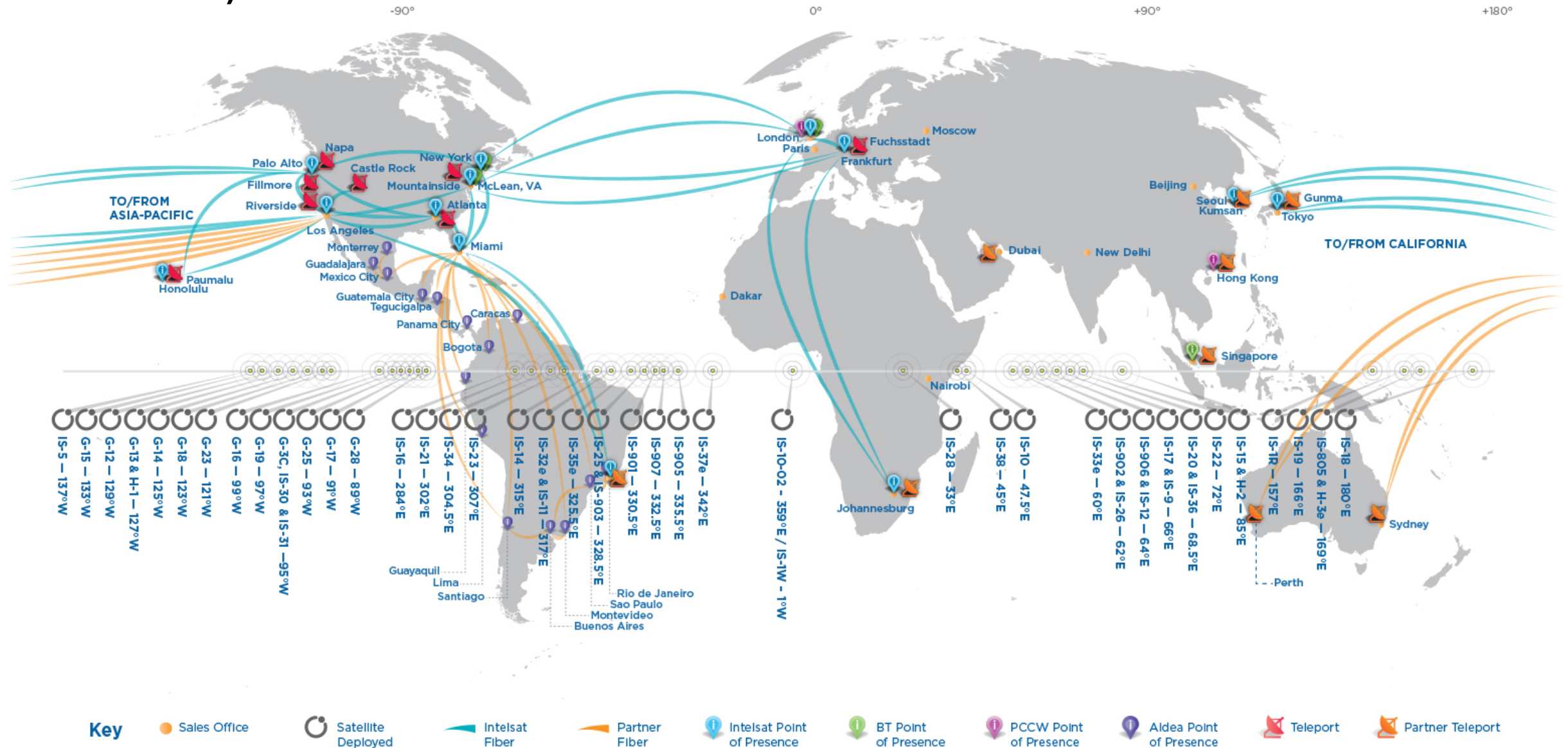


Government

- Reliable and secure global services
- Ground, sea and air mobile applications
- Customized solutions, hosted payloads
- Mission critical communication capabilities

One Network, Many Applications

Intelsat's Global Network Infrastructure: Scalable, Redundant and Resilient



Intelsat Automation Journey



Start



Now

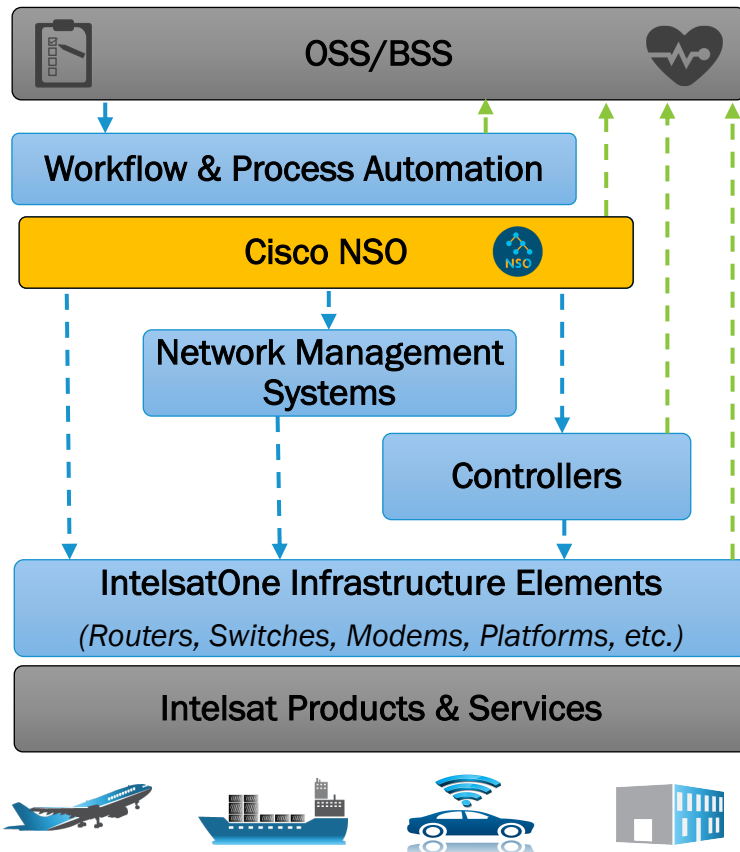


Finish?!?!

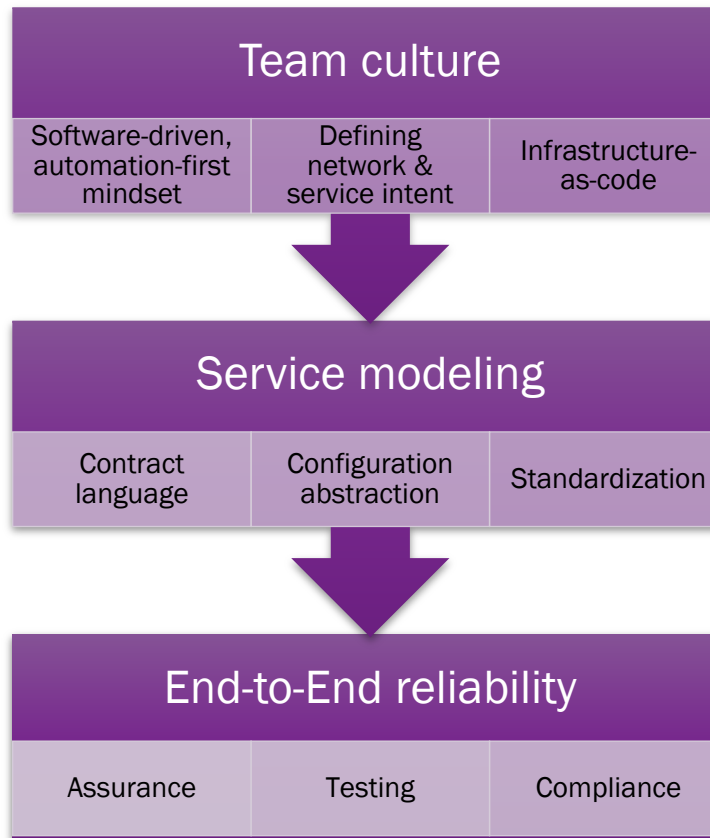
Organizational target

Transformation: Automated end-to-end service delivery

Architecture



Approach

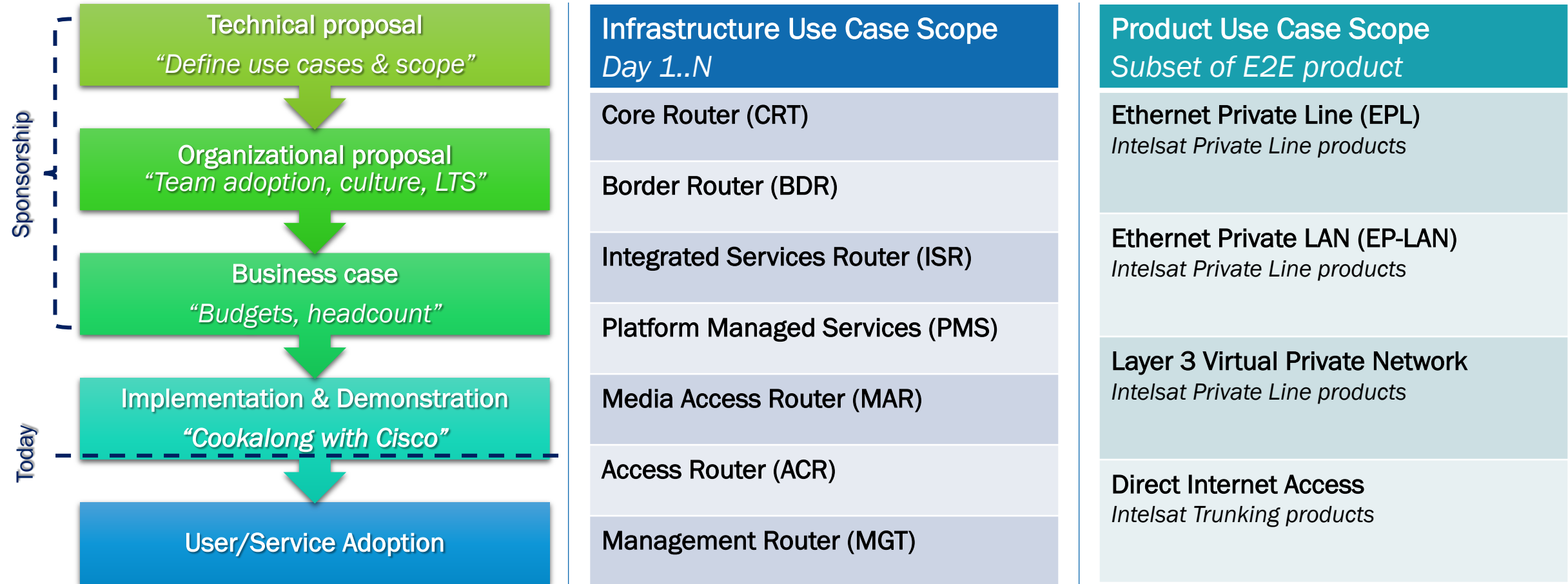


Objectives

- Reduce the technical debt surrounding service fulfillment & service assurance
- Eliminate static documents and templates for infrastructure & services configuration
- Eliminate configuration errors commonly encountered when manually deploying multiple services in succession
- Address personnel shortages and reduce vendor skillset fragmentation
- Prepare for scale in virtualization/cloud
- Improve responsiveness to IntelSat business units by reducing the time to provision infrastructure + services
- Present service models via Northbound API's for OSS/BSS applications
- Satisfy orchestrated fulfillment & assurance for IntelSat OSS transformation

NSO initial delivery

NSO service models for infrastructure & products





Cisco CX Point of View

Consulting and Deliverables

- **Automation Adoption Process**
 - Network Service Design with an Automation-Oriented Mindset
 - Jenkins Pipeline, Source Control Management
- **Test Automation:**
 - ROBOT with CXTA (FKA RASTA) based test automation framework
 - Templatize Test Development
- **Service Automation:**
 - Total of 25 Service Packages (13 RFS)
 - ~~Excel Spreadsheets for Customer and Service ID Management~~
 - NSO CDB as Interim Resource Manager
- **TACACS Integration**
- **NSO High Availability**

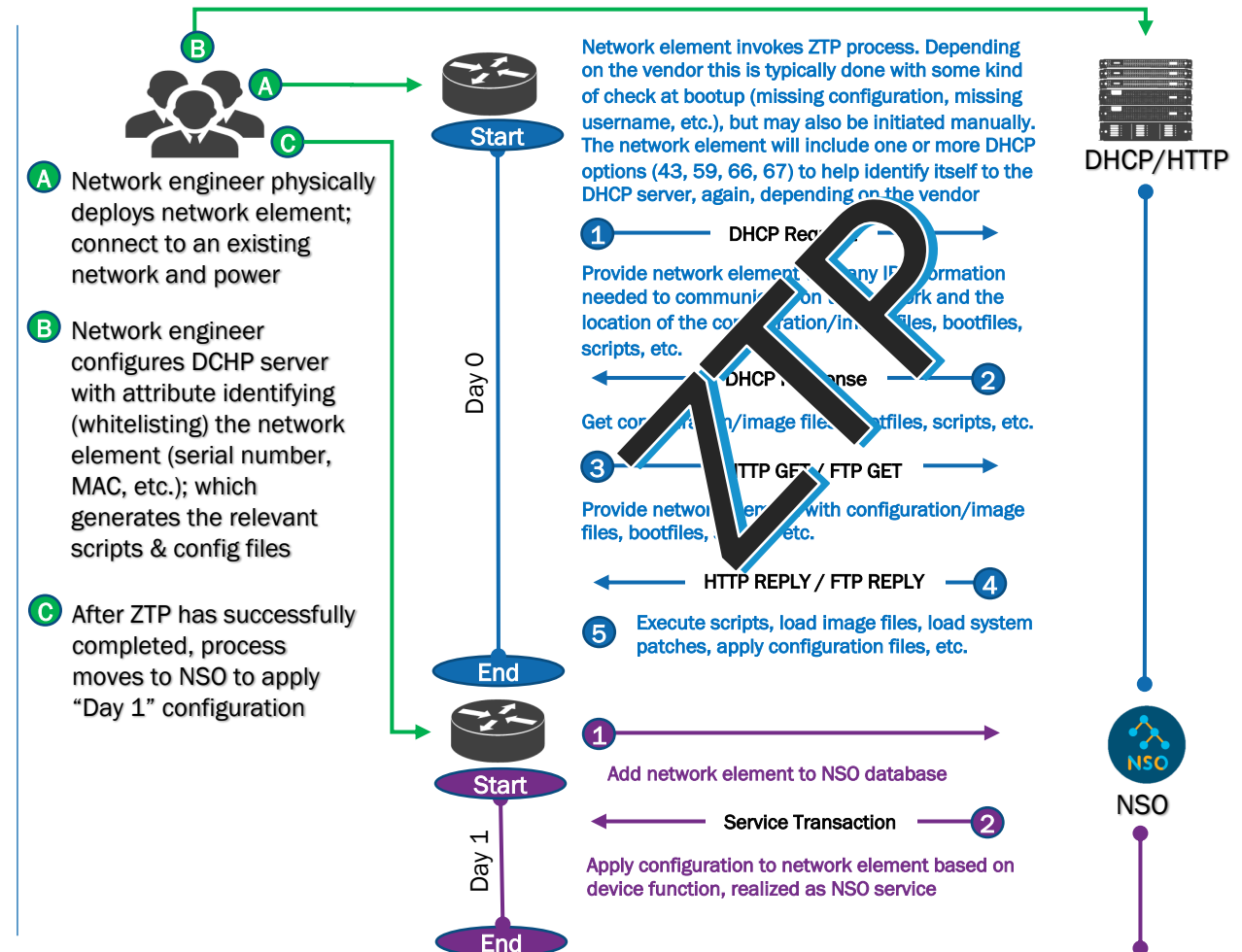


Infrastructure use case

NSO Challenge: Realizing Day 1..N infrastructure as a suite of services

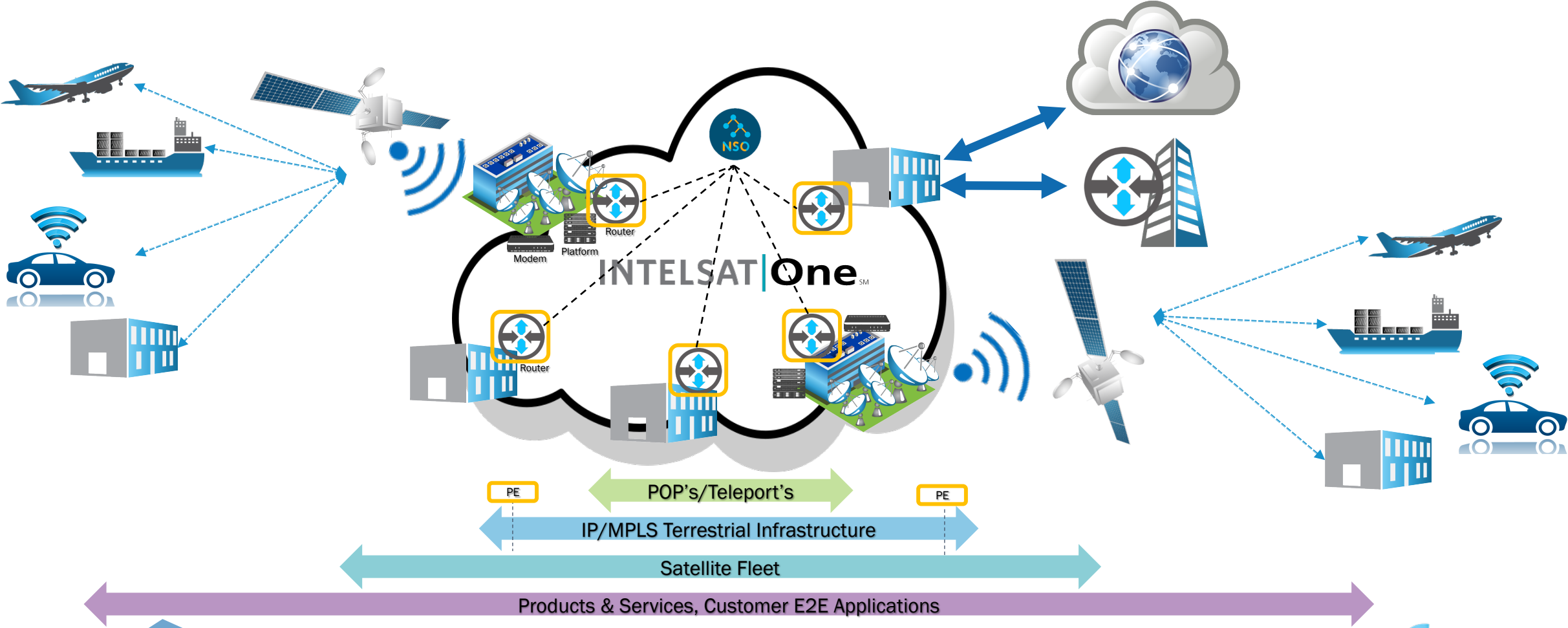
- **Day 0:** Images + minimum configuration required to establish communication between the network element and NSO
- **Day 1:** Infrastructure configuration, respective to IntelsatOne device function, required for the network element to participate in the network; applied by NSO service instance
 - NSO stacked service with CFS representing the device function (CRT, BDR, etc.), and RFS representing the various infrastructure design tenants (IS-IS, BGP, etc.)
- **Day 2..N:** Configuration changes via modification to NSO service models & templates pushed to the device; service delivery workflow ensures change management is centralized through NSO

Demonstration: Decreased the time required to realize Day 0 and Day 1 on a network element by ~91%



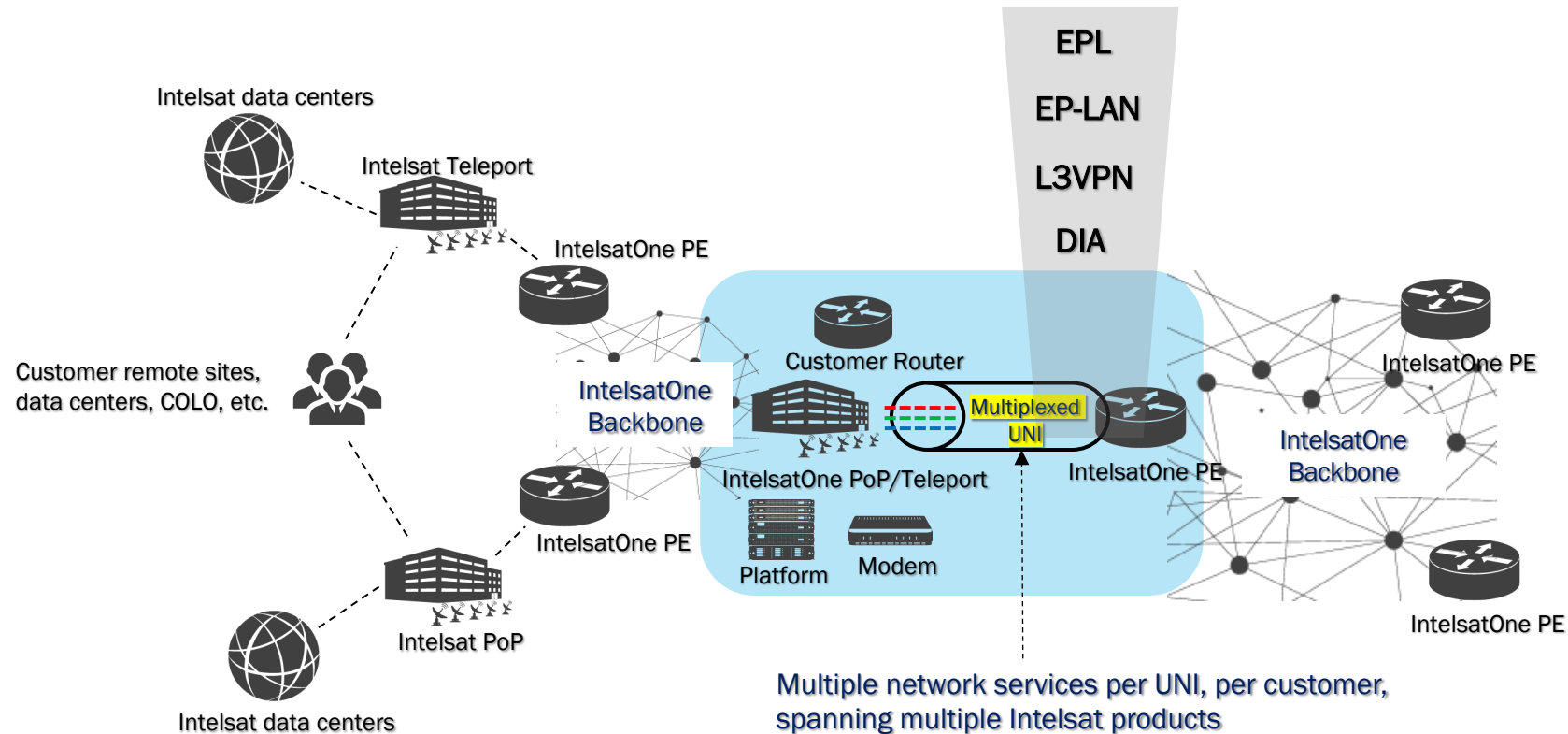
Customer service use case overview

Private Line & Trunking service components, IP/MPLS PE-to-PE



Customer service use case detail

NSO Challenge: Multiplexed physical UNI on IntelsatOne PE





Thank you

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