Comcast STIR/SHAKEN Deployment Case Study
## - The Approach, Progress, and Challenges

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SIP, STIR, and SHAKEN…

- We have followed ATIS-1000074 reference architecture to take advantage of IMS infrastructure:
  - Using origination and termination triggers in SiFC to control service introduction and deployment,
  - Integrating STI-AS/VS logic with a SIP frontend,
  - Integrating and enhancing KPI and network monitoring with existing tools.
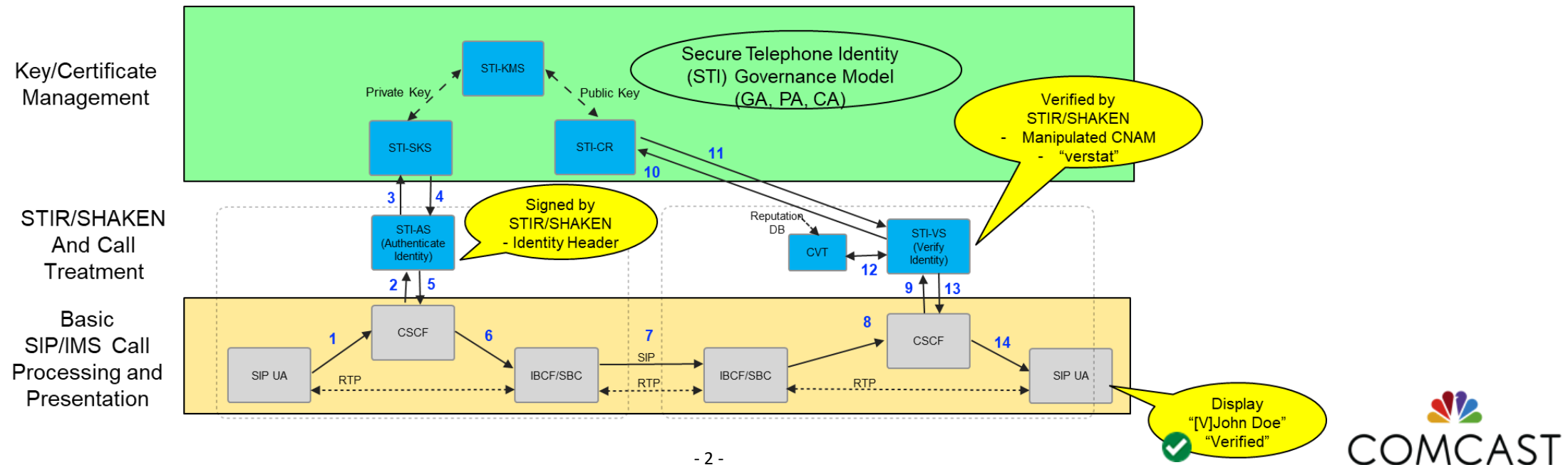
More SIP, STIR, and SHAKEN…

- Where there are stand-alone or pass-through service platforms, we employ an in-line SIP proxy solution:
  - Fronting STI-AS/VS logic with an in-line SIP transaction stateful, dialogue state-less proxy,
  - Integrating and enhancing KPI and network monitoring with existing tools.
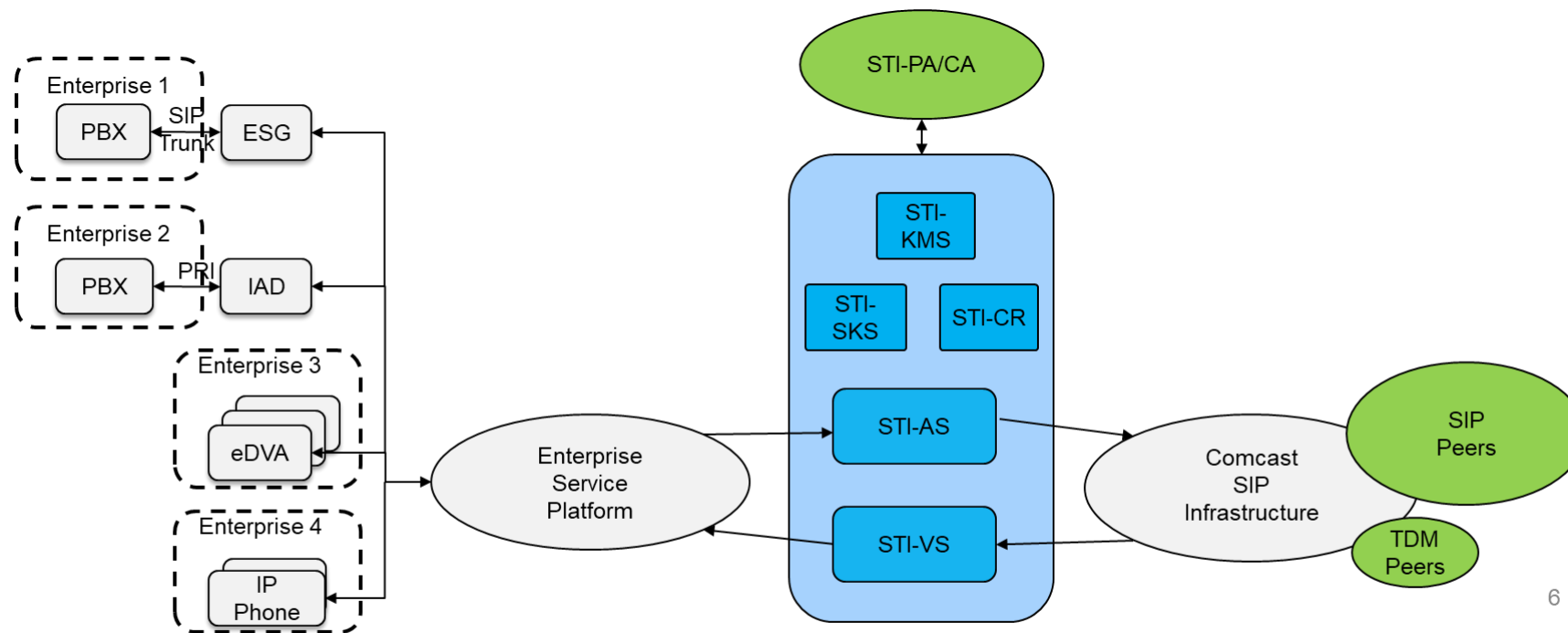
Progress of STIR/SHAKEN Coverage

- Major factors affecting STIR/SHAKEN coverage:
  - Service platform and infrastructure upgrade
  - Peering and transit arrangement
  - TDM to SIP migration
- Working with top 15 direct peering entities, we will get to around 20% for residential subscribers; the coverage will be around 12% by Eo2019.
- Parallel multipronged efforts required to go beyond 20%
  - End-to-end signing and verification through transit carriers: ~15%
  - Remaining peering partners: ~5%
  - Number service providers/Aggregators: ~30%
- Cannot be verified: ~20%
  - International, spoofing, mis-configured, etc.
- TDM: ~10%

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STIR/SHAKEN Deployment – Xfinity Voice Service Case Study
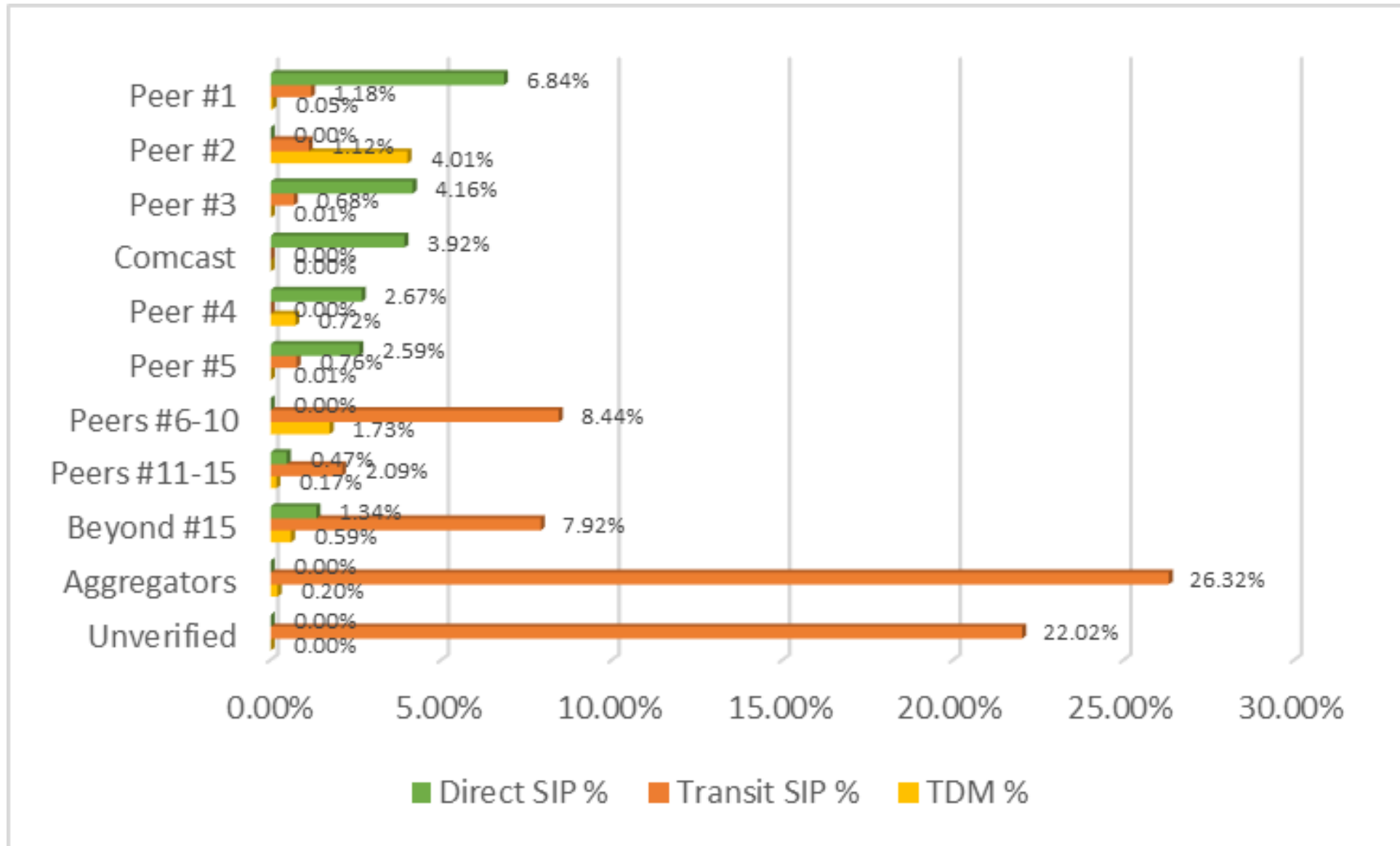
Challenges

- Infrastructure upgrades
  - Device/Network element compatibility on sizes and numbers of Identity header, and the resulted packet sizes
  - Stricter canonicalization requirements, especially in To header
  - Additional handling of new parameters, tags, and headers
  - Graceful introduction and ramping up of STI-AS/VS without disrupting existing services
  - TDM to SIP migration
- Peering processes
  - Quick start with self-signed roots while awaiting establishment of STI-PA/CA to scale
  - Careful planning of translation, routing, and network configurations
  - Pursuing both full signing/verification solution and Do-No-Harm (passing through) solution for interop, and there is no cookie-cutter solution
  - Moving forward with corner cases left out like roaming, route advance, failover, etc.
- Consumer and enterprise awareness and education
  - To display or not to display, that is the question; and what to display!
- Beyond base SHAKEN: Div for retargeted calls, RPH for emergency calls, Delegate Certificates/LOA for enterprises, etc.

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May the Force of STIR/SHAKEN Be With You!