NASPI North American SynchroPhasor Initiative

NASPInet 2.0 Update Briefing

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NASPI North American SynchroPhasor Initiative

Assessment of Existing Synchrophasor Networks

NASPInet 2.0

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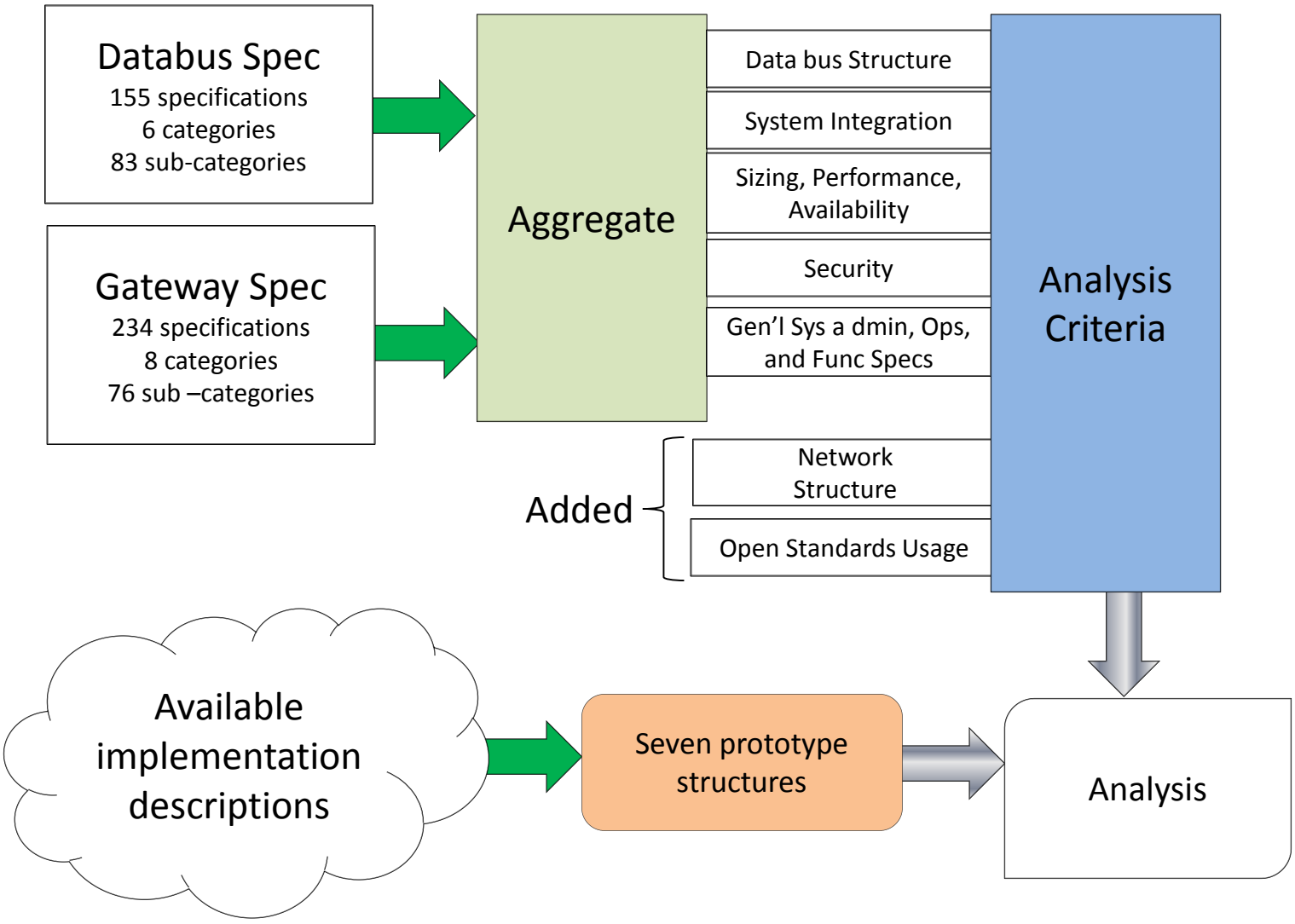
Purpose

- Learn from implementation experiences
- Assess possible need for specification revision
  - what was useful; what was not
- Consider:
  - emerging technologies
  - emerging use cases
  - new/revised systemic issues and priorities
- Guidance, not binding specification

Implementation Analysis Process



Source Materials for Analysis

- NASPI Working Group SGIG Update presentations
- NASPI Work Group presentations
- NASPI Work Group Success Story presentations
- NASPI Reliability Coordinator Data Quality Survey (March 2016)
- NASPI 2014 Survey of Synchrophasor System Networks – Results and Findings (July 2015)
- Various presentations from utilities

Next Steps for Analysis report

- Review – DNMTT?
- Revisions as needed
- Report release

New Specification Development

NASPInet 2.0

NASPInet 2.0 Document

- Will again be guidance and framework
- Update of original specification in light of experience
  - streamlining of the material
- Additional considerations:
  - emerging technologies
  - forward-looking use cases
    - wider area closed loop protection and control
    - adaptive protection
  - new/revised systemic issues and priorities
    - more focus on cyber security

NASPInet 2.0 ToC Draft

- Background and Purpose
- Scope
- Key Architectural Principles
- Core Requirements
- Problem Domain Reference Model
- Architectural Specifications and Recommendations
- Guidance on Newer/Emerging Technologies
- Appendices (as needed)

Core Requirement Categories

- scalability
- latency minimization
- reliability/(min packet loss)
- cybersecurity
- performance
- functional flexibility
- data persistence
- open standards usage/conformance
- data sharing
- data rates
- availability
- extensibility
- service classes
- governance

Problem Domain Reference Model

- Describes the problem environment
- Emerging trends & systemic issues
- Regulatory/public policy issues
- Key constraints & barriers
  - example: geographic constraints
- Entity-relationship (industry structure) model(s)
- Logical/data flow model(s)

Specification & recommendations

- Function class definitions (capabilities)
- Component class definitions (devices and systems)
- Communication networks
  - structures/topologies (intra-utility, WAN)
  - protocols, operating modes
  - network provisioning/monitoring/management: AAA; ZTD, FCAPS
  - QoS management
  - timing distribution
  - network level cyber security
- Systems- structures and interfaces; system level security
- Standards

Newer/Emerging Technologies
(compared to original spec time frame)

- Software Defined Networking
- Cloud Services
- Virtualization
- Distribution level synchrophasor measurement

Next Steps

- Inputs from DNMTT and elsewhere
- Draft document
- Review process
- Finalization

Thank You

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