IEEE P1900.4 WG

Information Model

Date: **2008-02-DD; Session Number and Osaka**

Authors:

Name	Company	Address	Phone	email
Mahesh Sooriyabandara, Tim Farnham	TREL			
Oliver Holland, Alireza Attar	KCL			
Makis Stamatelatos	UoA			
Kalus Naute	Alcatel-Lucent			

Part(s) of the P1900.4 D0.01 (approved in Madrid) addressed by the document?

4. System Architecture	
5. Use Cases	
6. General System Requirements	
7. Functional baseline Architecture	
8. Information Model and Representation	✓
9. Procedures	
Other : *(please detail)*	

Purpose

- First attempt to come up with detailed information model
- Define Manage Objects and associated Meta Data relevant to P1900.4 scenarios
- Describe Key Information Elements & their relationships
  - Class Diagrams

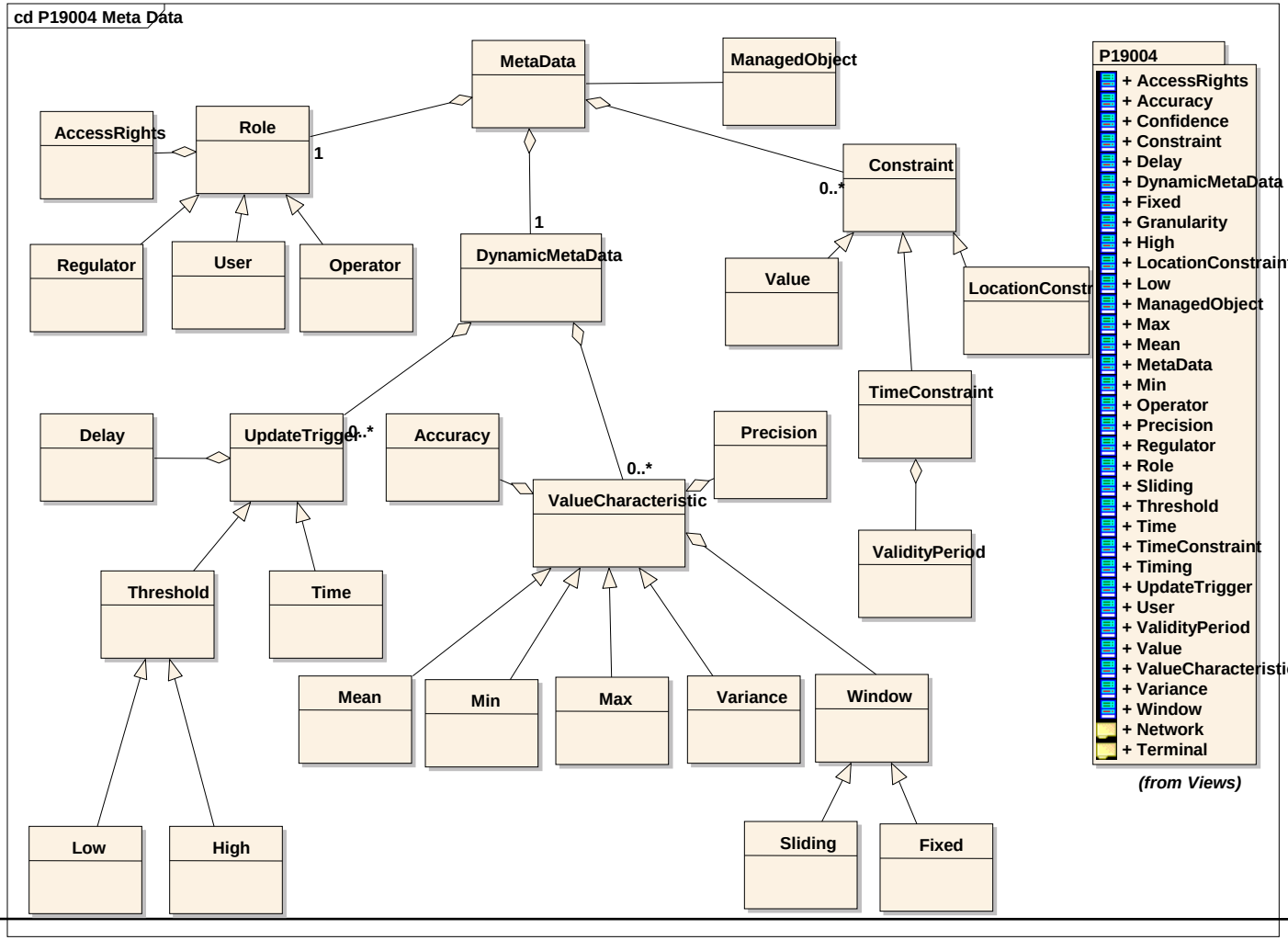
Overview

- Managed Object Meta Data
- Managed Objects in Terminals
- Managed Objects in RANs
- Managed Objects in NRMs

Managed Object Meta Data

- **Meta Data:** Provides Additional information about the managed Object
- **Types of Meta Data**:
  - Role:
    - Determines “ownership” & “access rights” – e.g. corresponds to regulator, operator or user.
  - Constraint:
    - location, time and value based constraints to determine the permissibility
  - Dynamic Meta Data:
    - common information which defines for example how & when object is updated, statistical properties etc. Useful to define measurement and configuration type information.

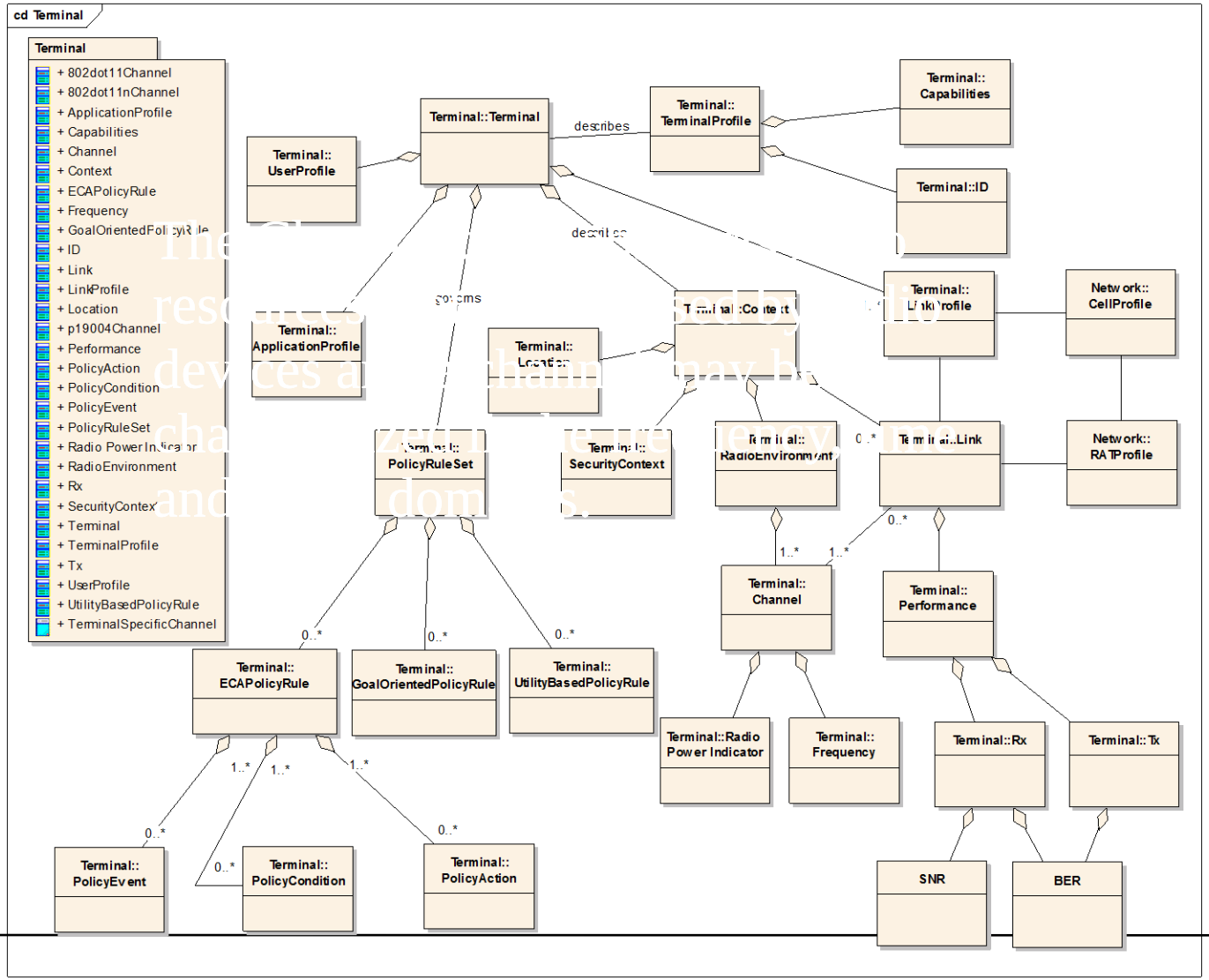
Meta Data Class Diagram



Managed Objects in Terminals

- Manage Objects includes
  - Link Profile, Terminal Profile, Policy Rule Set, Terminal Context *(user profile, application profile)*
- Link Profile: comprises of managed object related to the networks that care accessible by the terminal device
- Terminal Profile: contains terminal capabilities and uniquely identify a terminal
- Policy Rule Set: governs terminal behaviour in terms of selecting link configurations
- Terminal Context: contains managed object related to terminal context including location, radio environment, link performance

Terminal Managed Objects



Terminal::LinkProfile::

- Managed Objects to
  - TBD

Terminal::TerminalProfile::

- Managed Objects to
  - TBD

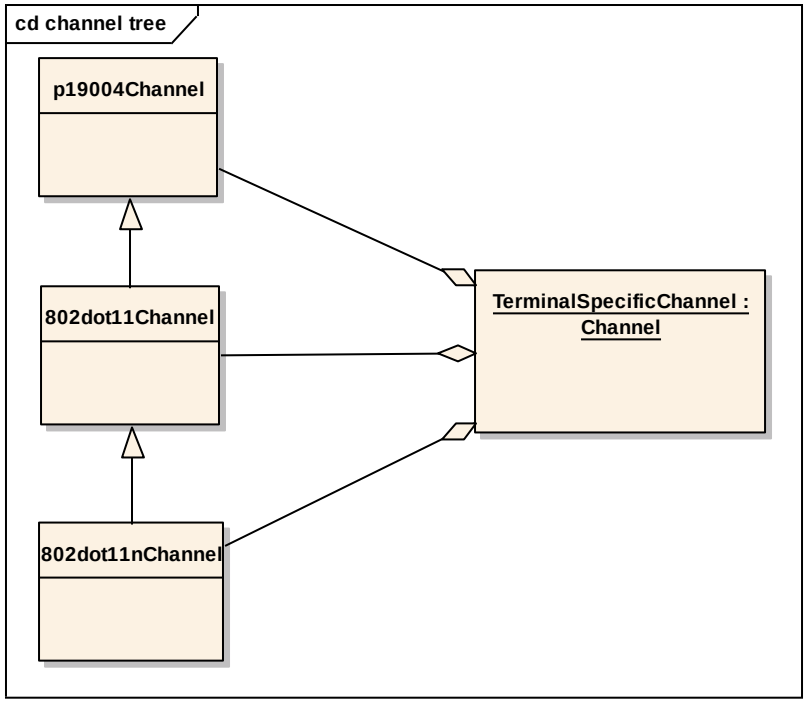
Terminal::PolicyRuleSet

- Managed Objects to
  - TBD

Terminal::TerminalContext:: RadioEnvironment

- Managed Objects to Characterise Radio Environment
  - Radio Resource Management schemes rely on monitoring of radio environment to estimate performance, identify spectrum opportunities etc
  - P1900.4 Managed Objects should cater for controlling measurement methods, statistical values derived etc in addition to capturing communication capabilities & performance information.
- Channel Object will contain the measurement and monitoring information objects.

Channel Object

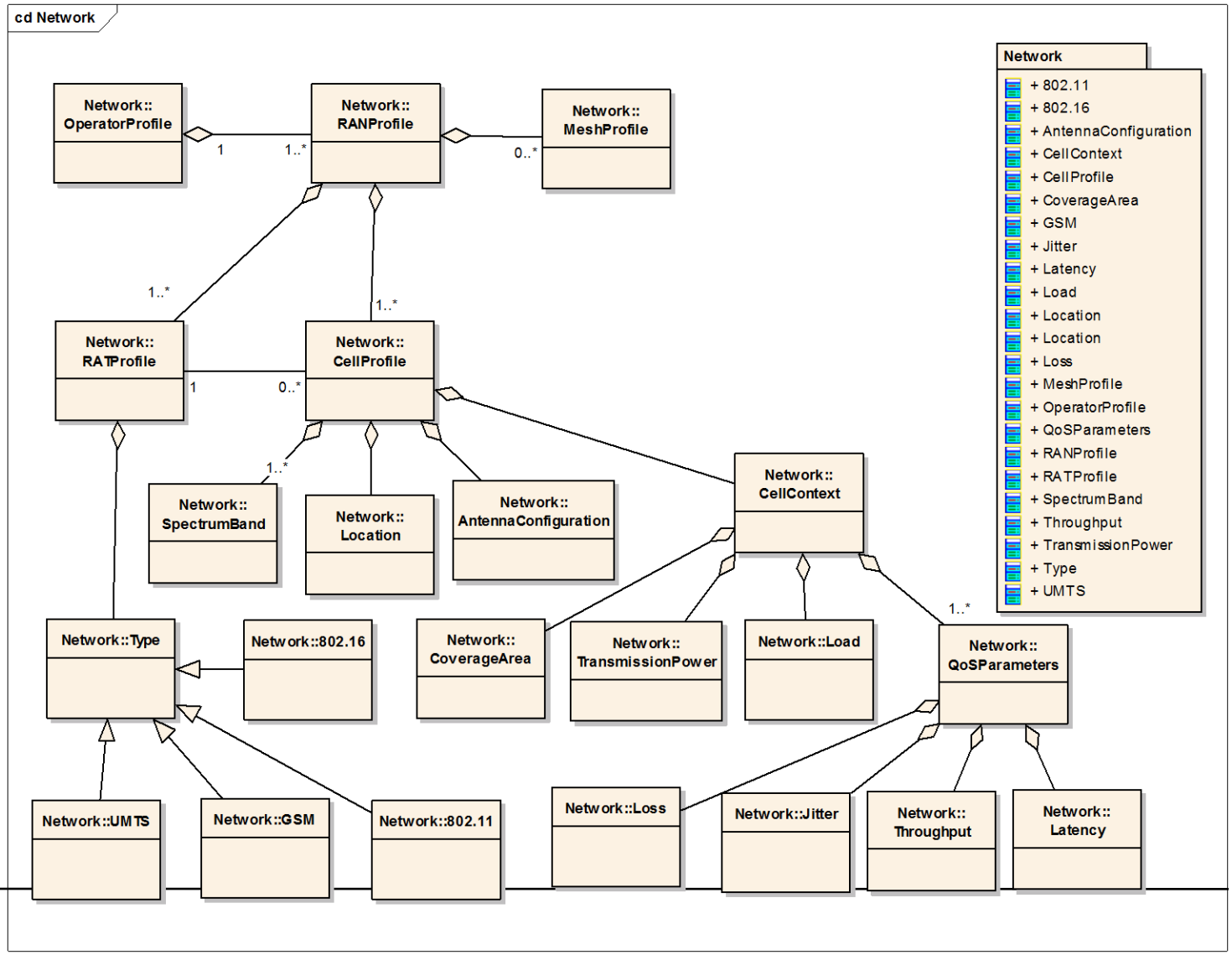


- Channel class abstracts radio resources that can be used by radio devices characterized in the frequency, time and space domains.

Managed Objects in RANs

- Manage Objects includes
  - RANProfile, OperatorProfile, MeshProfile,CellProfile, etc…

RAN Managed Objects



Managed Objects in NRMs

- Manage Objects includes
  - TBD

Discussions

- What are main Managed Objects in
  - Terminals?
  - RANs
  - NRMs
- Other types of meta data?

This work was performed in project E2R II which has received research funding from the Community's Sixth Framework programme. This presentation reflects only the author's views, and the Community is not liable for any use that may be made of the information contained herein. The contributions of colleagues from E2R II consortium are hereby acknowledged