

Constrained MANagement (COMAN)

Management of Networks with Constrained Devices

[draft-ersue-opsawg-coman-probstate-reqs](#)
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COnstrained MANagement

- COMAN activity started in Paris (March 2012) after a discussion in OPS directorate with kind support of OPS AD Benoit Claise.
- Good progress after Paris:
 - provided draft-ersue-constrained-mgmt with a problem statement, topology options, requirements on networks with constrained devices and use cases,
 - terminology on device classes put into LWIG terminology document.
- However COMAN activity did not fly as expected:
 - group of people were meeting during IETF for lunch but . . .
 - insufficient resources for further work on the way to a BoF,
 - gap analysis couldn't be done as planned.
- Finally in Berlin (July 2013) agreed to publish what we have so far:
 - as reference for current active work (e.g. MANET mgmt, Restconf)
 - as input and guideline for future work.
- Draft now divided into two pieces:
 - the problem statement and requirements,
 - use cases.

draft-ersue-opsawg-coman-probstate-reqs

- The draft covers basically:
 - Description of the characteristics of networks in focus,
 - Constrained device deployment options,
 - Management topology options,
 - Discussion of the constrainedness of a network and how it influences the management of devices.
 - Problem statement on the issue of the management of constrained devices and the networks with constrained devices.

draft-ersue-opsawg-coman-probstate-reqs (ctd.)

- Requirements on the management of networks with constrained devices for following topic areas:
 - Management Architecture/System
 - Management protocols and data model
 - Configuration management
 - Monitoring functionality
 - Self-management
 - Security and Access Control
 - Energy Management
 - SW Distribution
 - Traffic management
 - Transport Layer
 - Implementation Requirements
- Each requirement definition provides a description, the information on the source, the requirement type (functional or non-functional), the corresponding device types as well as the priority of a requirement.

draft-ersue-opsawg-coman-use-cases

- COMAN use cases draft discusses diverse use cases for the management of networks with constrained devices from the network as well as from the application point of view.
 - The use case first describes the expected network and management topology.
 - For each application scenario, the characteristics are briefly described followed by a discussion on:
 - how network management can be provided,
 - who is likely going to be responsible for it, and
 - on which time-scale management operations are likely to be carried out.

draft-ersue-opsawg-coman-use-cases (ctd.)

- Following are the use cases discussed in the document:
 - Environmental Monitoring
 - Medical Applications
 - Industrial Applications
 - Home Automation
 - Building Automation
 - Energy Management
 - Transport Applications
 - Infrastructure Monitoring
 - Community Network Applications
 - Mobile Applications
 - Automated Metering Infrastructure (AMI)
 - MANET Concept of Operations (CONOPS) in Military

Related work

- MANET management
- The work in LWIG WG but especially LWIG terminology draft ([draft-ietf-lwig-terminology](#))
- Proposed new work in Core WG on REST-based access to MIBs (CoAp Management Interfaces, [draft-vanderstok-core-comi](#)).
- RESTCONF v2 providing RESTfull configuration management e.g. usable in MANET-like environments ([draft-bierman-netconf-restconf](#))
- Analysis of existing standards from including specifications from other SDOs (<http://datatracker.ietf.org/doc/draft-greevenbosch-coman-candidate-tech/>).
- MIB work in IPv6 over Networks of Resource-constrained Nodes ([draft-schoenw-6lo-lowpan-mib](#)).
- MIB work in IPv6 over the TSCH mode of IEEE 802.15.4e (6tisch)

The way forward

- In Berlin, COMAN lunch participants agreed that it would be valuable if the use cases and requirements from the original coman draft get published.
 - The document was too long, so it should be divided into two parts.
- The aim is to have these documents available:
 - as reference on use cases and requirements as possible objectives in different environments,
 - as reference to be used in current active work (e.g. CoAp Management Interface, Restconf) and
 - as input and guideline for future work.
- Proposal:
 - Adopt the two drafts in OPSAWG and publish after review and revision as Informational RFC.
 - Aimed target: IETF #89

Many thanks to the Contributors and reviewers on Coman maillist

- Following persons made significant contributions to this document:
 - Ulrich Herberg (Fujitsu Laboratories of America) contributed the [Section 3.9](#) on Community Network Applications.
 - Peter van der Stok contributed to [Section 3.5](#) on Building Automation.
 - Zhen Cao contributed to [Section 3.10](#) on Mobile Applications.
 - Gilman Tolle contributed the [Section 3.11](#) on Automated Metering Infrastructure.
 - James Nguyen and Ulrich Herberg contributed the [Section 3.12](#) on MANET Concept of Operations (CONOPS) in Military.