

# Constrained MANagement (COMAN)

## Management of Networks with Constrained Devices

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

[draft-ersue-opsawg-coman-use-cases](#)

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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



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  - 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.