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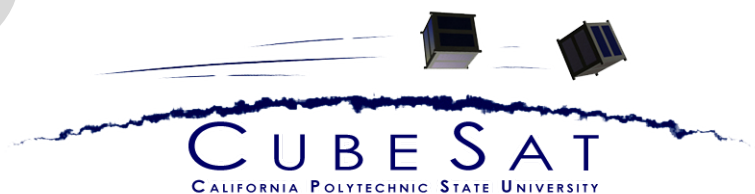
SATNET PROJECT

RELEASE SPECIFICATION

REFERENCE: SATNET-2-RELEASESPECIFICATION

DATE: OCTOBER 21, 2013

ISSUE: DRAFT (R1)



1 Document Control Data

1.1 Distribution License



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1.2 Contact

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1.3 Change History Log

Date	Revision	Author	Description of Changes
2013.10.21	DRAFT	Ricardo Tubio	Initial version for release 1.

1.4 List of Acronyms

AD	Applicable Document
API	Application Programming Interface
ASR	Availability and Scheduling Rules Set of rules that define the availability and scheduling for sharing a given ground station.
G-Client	Ground Station Client Software component of the SATNet network for ground station operators to share their facilities.
G-Client-IF	Ground Station Client Interface Communications interface provided by the SATNet network to the G-Clients.
G-Operator-UI	Ground Station Operator User Interface User interface for ground station operators to access to the services of the SATNet network.
M-Client	Mission Operation Client Software component of the SATNet network for satellite operators to utilize remote ground station facilities.
M-Client-IF	Ground Station Client Communications interface provided by the SATNet network to the M-Clients.
N-System	Network Communications System Central cloud-computing based component of the SATNet network for interconnecting G-Client(s) and M-Client(s).
Non-SCS	Non-Scheduled Communications Service Communications service provided by the SATNet network for permitting ground stations to store data received without previous request by spacecraft operators.
Pre-SCS	Pre-Scheduled Communications Service

Communications service provided by the SATNet network for enabling the data messages exchange between spacecraft operators and ground stations.

RD Reference Document

S-Operator-UI Spacecraft Operator User Interface

User interface for spacecraft operators to access to the services of the SATNet network.

SATNet SATellite Network

SOR Spacecraft Operation Request

Request placed on the N-System by satellite operators for requesting the utilization of certain ground stations.

TBC To Be Confirmed

TBD To Be Determined

TBW To Be Written

UHF Ultra High Frequency

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1.6 Applicable Documents

ID	Title	Reference	Author	Issue
AD-0	SATNet Project Management Plan	satnet-0-ManagementPlan	CalPoly rtubiopa@calpoly.edu	- TBD
AD-1	User Specification	satnet-1-UserSpecification	CalPoly rtubiopa@calpoly.edu	- 1

1.7 Reference Documents

ID	Title	Reference	Author	Issue
RD-00	Space Engineering - System Engineering General Requirements	ECSS-E-ST-10C	ECSS - www.ecss.nl	C
RD-01	Space Engineering - Technical Requirements Specification	ECSS-E-ST-10-06C	ECSS - www.ecss.nl	C

1.8 Object & Scope

The object of this document is to contain a selection of the features defined in document [AD-01] which must be implemented for the release 1 of the software.

The first section of this document briefly describes the release objectives and the planned scheduled. The second section contains the selection of the applicable requirements for the release 1 of the software.

The contents of this document are applicable for the development of the first release of the software.

2 Software Release

2.1 Objectives

The main objective for this software release (R1) is to provide a first software version of a system that permits:

1) Mission Operators registering. 2) Spacecraft Configuration. 3) Ground Station Operators registering. 4) Ground Station Configuration (no need for ASR rules). 5) Spacecraft remote commanding through scheduled ground stations.

There is also to bear in mind that no security or privacy system is going to be implemented for this software release. This way, this first implementation can focus on providing a set of basic communications features between spacecraft and ground stations.

For meeting these objectives, from among all the features given in document [AD-1], a set of minimum requirements has been selected. This subset of requirements is described in subsections below.

2.2 Schedule

- The software release R1 shall be completed by mid-December 2013.

3 Features Selection

3.1 Selected Use Cases

3.1.1 Management Services

These are the very simple management services that will permit the registration of new software clients in the system. In addition, it will also permit the configuration of spacecraft and ground stations.

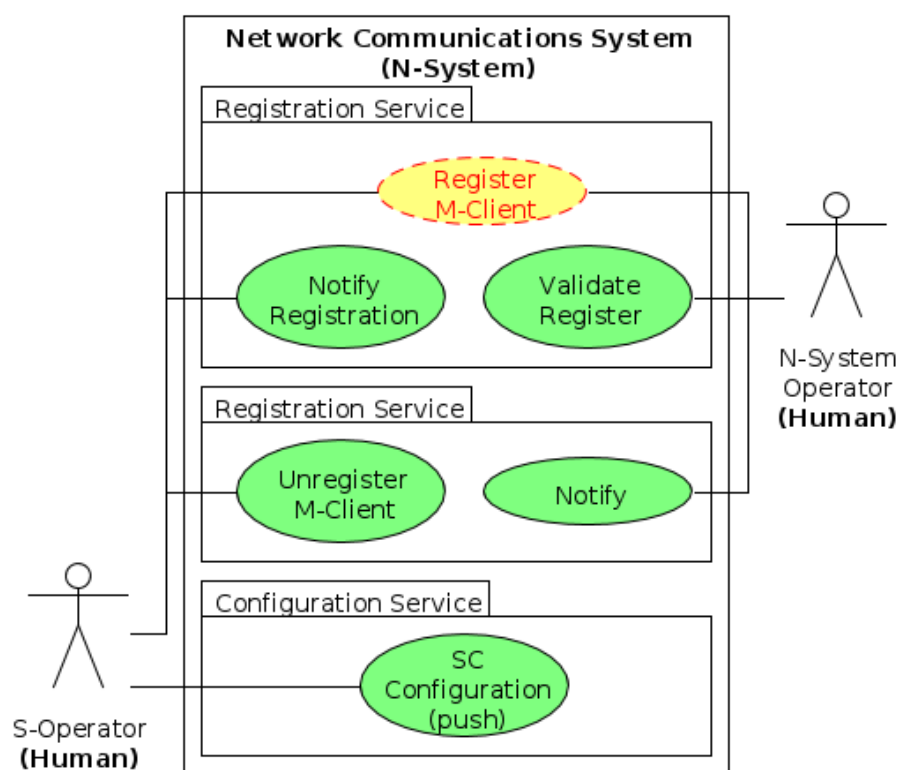


Figure 1: Registration and configuration, mission operators

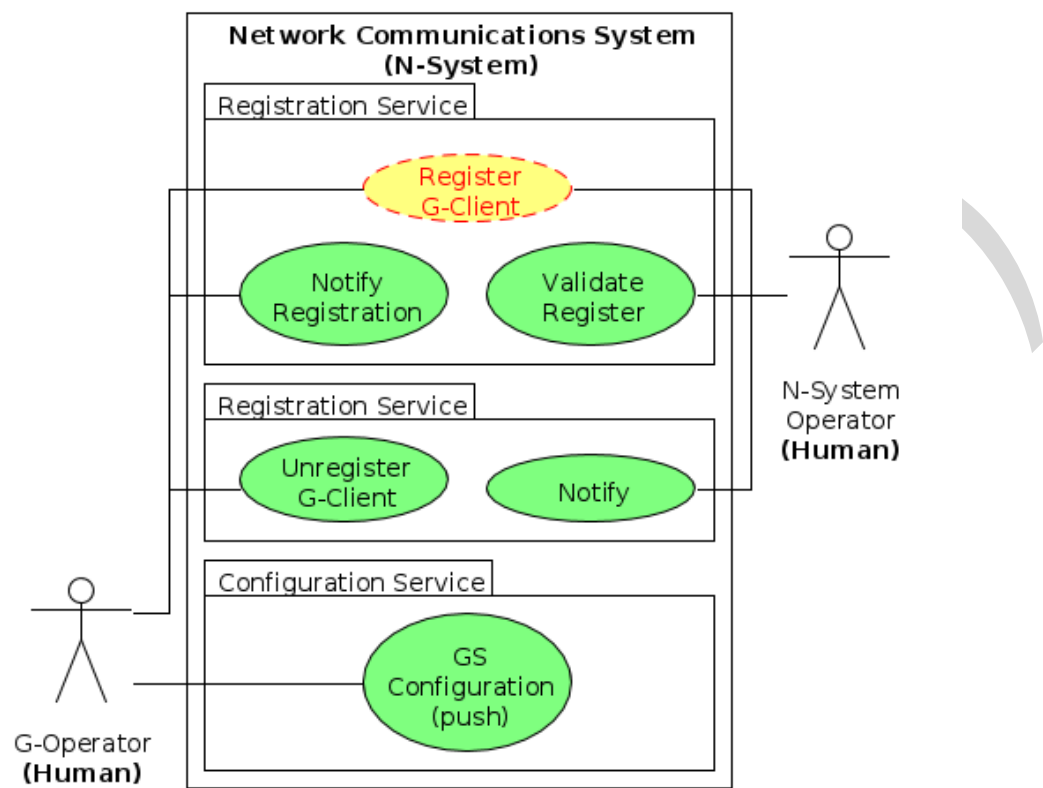


Figure 2: Registration and configuration, ground station operators

3.1.2 Typical Remote Spacecraft Operation

This is the typical remote spacecraft operation with no security or privacy mechanism. Besides, a simple error management mechanism is to be implemented.

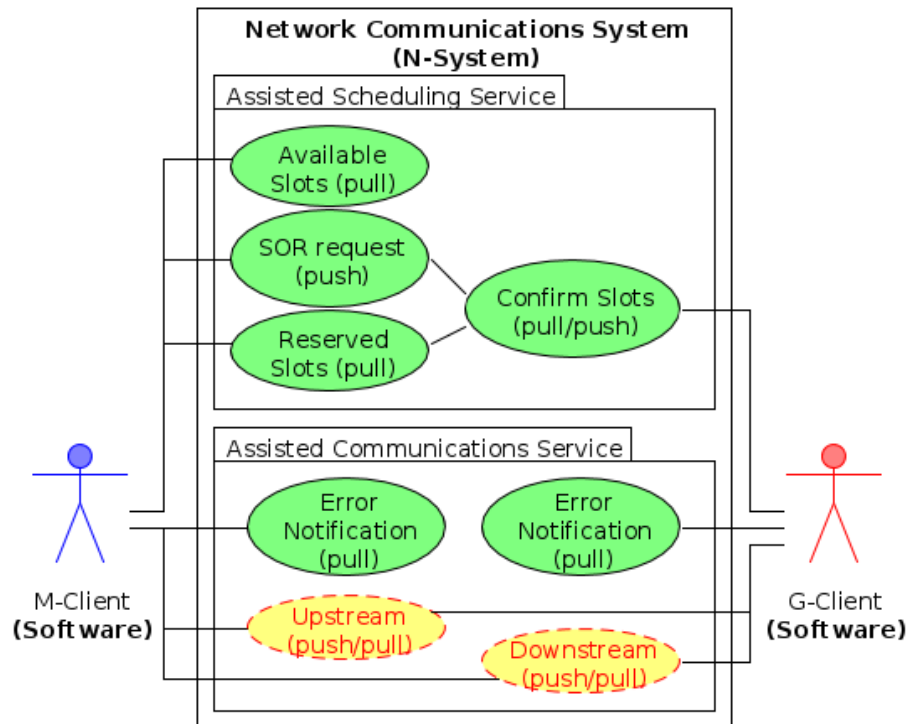


Figure 3: Assisted Operation

3.2 Selected Requirements

- General Requirements
 - USR-GEN-010, USR-GEN-020, USR-GEN-040, USR-GEN-050
 - USR-GEN-060, USR-GEN-070, USR-GEN-080, USR-GEN-090
 - USR-GEN-100, USR-GEN-110, USR-GEN-120, USR-GEN-130
- System Access and Security Requirements
 - USR-ACC-010, USR-ACC-020, USR-ACC-060
- Service Provision Requirements
 - USR-SRV-010, ONLY services 1, 2, 4, 6
 - Registration: USR-SRV-020, USR-SRV-050, USR-SRV-060, USR-SRV-070
 - Configuration (1): USR-SRV-080, USR-SRV-090, USR-SRV-100, USR-SRV-110
 - Configuration (2): USR-SRV-120
 - Assisted Scheduling (1): USR-SRV-170, USR-SRV-180, USR-SRV-190, USR-SRV-200
 - Assisted Scheduling (2): USR-SRV-240, USR-SRV-250
 - Assisted Communications: USR-SRV-320, USR-SRV-350, USR-SRV-360
- Implementation Requirements
 - USR-IMP-010, USR-IMP-030, USR-IMP-050, USR-IMP-090
 - The applicable interface definition for this requirements can be found at [AD-3]:
 - * USR-IMP-040, USR-IMP-060, USR-IMP-070