

New Global Framework

for Sharing of Space Technology
and Data Standards To serve Nation's
Disaster Management Needs

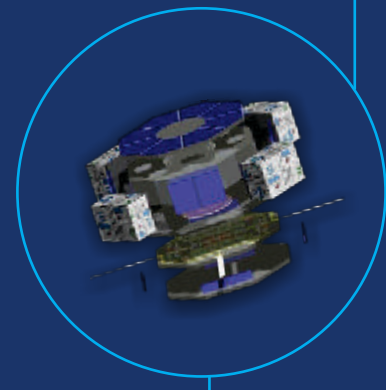


CANEUS WORKSHOP

THIRD UN WORLD CONFERENCE ON DISASTER RISK REDUCTION

Sendai-Japan

March 17h, 2015, 9:00 – 12:00



Concept of UN Global-Sat For
commitment to the
post-2015 framework for disaster
risk reduction



Overview

To set the stage for discussion at the workshop, the relevant issues are summarized in three sections.

A. The first section summarizes the end user requirements and lessons learned identified by the stakeholders.

B. The second section addresses technical issues covering the Global-Sat Constellation concept of operations framework wherein dedicated payloads can be built all over the world and integration done in states that build the payloads.

Additionally, issues covering common ground segment, common launch interface and deployment system, inter-satellite communication system, and availability of spares across all participants will be described, which would reflect the needs and input from all the international stakeholders. Basic tenants for a collaborative frame work are proposed including data collection and distribution,

value added services, leveraging of partner resources, cost structures and responsibilities.

C. The final section covers business models, including funding, management and operational issues. Based on these comprehensive assessments, potential partners expect to have the necessary understanding and insights needed to participate in the system definition, deployment, planning and funding identification activities.



UN Global-Sat Concept of Operation: International Consortium

A. It is proposed that the UN Global-Sat Constellation be transitioned and maintained as an international consortium sharing the costs of operating and maintaining the constellation.

B. The operational concept requires partners in the consortium to share segments' architecture and the level of participation is inherently flexible as partner nations may choose whether to build or buy a satellite, ground terminals, and processing tools based on the information and standards initially provided in the development phase.

C. The UN Global-Sat Consortium would assign a Technical Manager to design, build, launch, demonstrate, and provide necessary training for the Nano-satellites constellation.

D. The Technical Manager could provide the hardware and software designs and prototypes so that commercial, profit, and/or non-profit national / international space firms could participate with government labs, universities, technical institutes and others in order to sustain and improve the program.



UN Global-Sat Business Model

A. Fractional Ownership Model:

In this model, multinational participants partner to deploy a constellation of relatively inexpensive Nano-satellites and a network of small, moveable ground terminals that together create an efficient, persistent communications infrastructure.

Partnership is provided in return for investment in the system. Investment may be monetary, or in-kind contributions such as develop and build a spacecraft bus, integration & testing, training, launch services, etc.. For example, each country pays a fee for the participation to the UN Global-Sat Consortium for managing this program. Furthermore, with the “group block” purchase, the Central management organization would be able to distribute data to participating countries at no extra cost.

B. Data and Cost of Service Model:

An economical data sharing cost structure mechanism needs to be created for an international data policy framework commensurate with the underlying need for globally shared data, which must transcend the regionally restrictive and costly subscription model that most existing commercial satellite data collection services currently use and, be consistent with a viable business case for the satellite hardware and services.

Potential Data Policy Model 1: In this policy it is assumed that the UN Global-Sat System is supported by a membership organization made up of participants in the program.

- Each national partner contributes to a pool of funds to cover the cost of operations the amount of which is based solely on the partner’s usage, as a not-for-profit based operation. Ownership of the data is recognized as that of the entity that first makes the information available.

- The subsequent value added steps associated with collection, synthesis and distribution are also recognized and assigned a rate that is used as a basis for assessing the cost of usage for the partnering nations.

- Each participant in the supply chain will have an agreement with the Consortium that will allow for unrestricted use of non-proprietary data for the members of the collaboration.

Potential Data Policy Model 2: This policy concept is much the same as the first proposed policy except that a commission of members sets a rate for a cost per bit of data based on annual estimated cost of operation. The Consortium System would keep track of all data collection and distribution transmissions based on cost of data – collected and distributed. The rate is determined by a commission of members and covers all cost associated with the continuing operation of the System.



Business / Implementation Model

A framework needs to be established that provides for the planning, implementation and management of the continuing operations associated with the UN Global-Sat System. The cooperative of Nation States interested in the Nano-satellite based constellation should be organized under an international charter and subsequently provide the administration for the organization's transition through each building phase of the International Collaborative. Development of the charter, business framework, and phases of maturation will be a focus activity for the White paper and a few suggestions relative to this subject matter are offered here.

Potential Framework: Self Governed International Membership Organization:

- With this business model, the administration, deployment and continuing operations of the UN Global-Sat System will be governed by a not-for-profit cooperative of

Nation States organized under an international charter.

- A Board of Governors appointed by member Nations and populated with representatives from each stakeholder group, will be responsible for all activities associated with the cooperative.
- Member nations will pay for cost of operation and deployment of assets by contributing to a pool of funds, the amount will be based on membership usage and those usage fees can be mitigated by member's assignment of National assets and services rendered in support of the UN Global-Sat System.
- The organization will mature through a system definition/deployment phase and a continuing operation phase. Working groups will be established for the space and ground segments of the UN Global-Sat System and will be populated by all stakeholders with subject matter expertise.

