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COMMISSION FOR BASIC SYSTEMS
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EXPERT TEAM ON SATELLITE UTILIZATION AND PRODUCTS

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NOWCASTING PRODUCTS AND SWFDP MATTERS

SCOPE-NWC concept of operations outline

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Summary and Purpose of Document

To provide a draft concept of operations for the Sustained, Co-Ordinated Processing of Environmental Satellite Data for Nowcasting (SCOPE-NWC) for consideration by ET-SUP.

ACTION PROPOSED

The sixth session is invited to:

- (a) consider the proposed concept of operations;
 - (b) suggest changes and improvements to the document as presented;
 - (c) propose further actions to progress the SCOPE-NWC concept.
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SCOPE-NWC CONCEPT OF OPERATIONS OUTLINE

Introduction

1. The aim of the Sustained, Co-Ordinated Processing of Environmental Satellite Data for Nowcasting (SCOPE-NWC) is to establish a network of facilities ensuring continuous and sustained provision of high-quality satellite products related to nowcasting, responding to the requirements of the World Weather Watch (WWW).

Background

2. The concept for SCOPE-NWC arose from discussions at ET-SUP-5, after consideration of the benefits of the SCOPE-CM initiative. It was felt by ET-SUP-5 that the concept could be usefully expanded to the nowcasting domain, given that:
 - The related science is reasonably mature;
 - An organized user community is available;
 - An established description of the needs of this community exists;
 - There are opportunities and synergy with other initiatives.
3. SCOPE-NWC is aligned with a number of WMO initiatives, in particular the Severe Weather Forecasting Demonstration Project (SWFDP). SWFDP is focused primarily on numerical weather prediction output; the observational focus of SCOPE-NWC has the strong potential to complement and enhance the SWFDP.
4. Should it move to an implementation phase, SCOPE-NWC will need to operate as far as possible within the WIS-WIGOS framework, including as concerns delivery mechanisms for products.

Objectives

5. The key objective of SCOPE-NWC is to provide a mechanism through which satellite data can be made available simply and quickly, primarily for users in the NMHSs of smaller or developing nations, where expertise and facilities for processing and utilizing satellite data may be limited.
6. To achieve this goal, SCOPE-NWC must facilitate the provision of sustained products. That is, the satellite products must:
 - a) have a long-term stable status, beyond individual satellite missions; and
 - b) include provisions for smooth adaptation to different satellite sources so that users do not have to change systems or implement new training every time a spacecraft changes.
7. The products must also be coordinated. That is:
 - a) Products need to be consistent across platforms; and
 - b) Products from different satellites should be interoperable.

Concept

8. The concept for SCOPE-NWC builds on the WIS framework as concerns the metadata definition, data discovery and operational data flow. In addition, it shall include user interaction for consultation on needs, gathering feedback and ensuring outreach, and an expert component for defining standard products and formats and for validation of the products and their documentation. In essence, a finite number of standard products will be defined by the

steering committee. In addition, the steering committee will define a finite number of areas of interest.

9. Products will be generated in real time over the defined areas of interest by the Data Providers and sent to the Host Agencies. There may be multiple Data Providers for any one area of interest. The host agencies will act as a repository for the products and provide online access, and will push products to specific Client Agencies as required. The concept of operations is depicted in Figure 1.

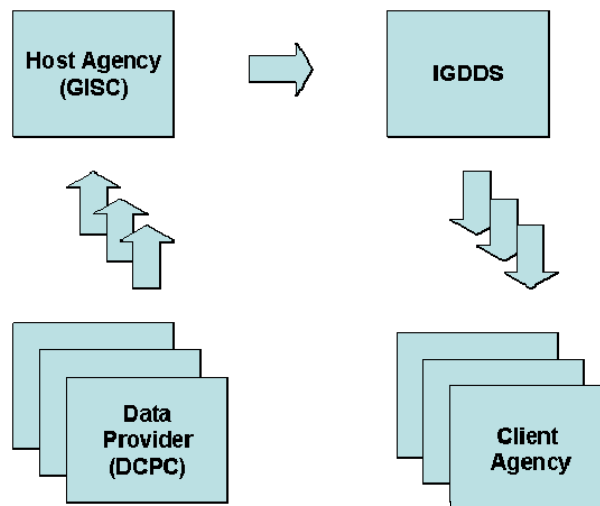


Figure 1 – SCOPE-NWC Concept of Operations

Roles

10. The SCOPE-NWC concept requires a number of different roles to be filled, these are:
 - a) Client agency;
 - b) Host agency;
 - c) Data provider;
 - d) Steering Committee.

Each of these roles is described in detail below.

Client Agency

11. The *Client Agency* is the primary user of the products provided through SCOPE-NWC. The primary roles of the Client agency are:
 - a) to define their requirements and make a formal request for products to be generated over their area of interest;
 - b) to make appropriate use of the products to serve their end-users and to provide feedback on issues or errors.

Host Agency

12. The *Host Agency* operates the repository for products to be delivered to Client Agencies. In this sense, the Host Agency functions as a Global Information System Centre under the WIS framework. The primary roles of the Host agency within SCOPE-NWC are:
 - a) to gather data from the various Data Providers;
 - b) to make data available to Client Agencies in a timely and effective manner;
 - c) to provide a contact point for Client Agencies to raise issues or report problems.

Data Provider

13. The *Data Provider* is responsible for generating SCOPE-NWC products and providing these to the Host Agency. In this sense, the Data provider functions as a Data Collection or Production Centre (DCPC). A data provider can be a satellite operator, or another organisation with real-time access to satellite data. The primary roles of the Data Provider within SCOPE-NWC are:
- a) to generate products covering areas of interest;
 - b) to provide products to the Host Agency in a timely and reliable manner;
 - c) to provide a point of contact for data problems and issues.

Steering Committee

14. The SCOPE-NWC *Steering Committee* is responsible for overseeing all SCOPE-NWC activities and ensuring that activities are coordinated appropriately. The Steering Committee will fulfil the following roles:
- a) to agree on standard products, formats and areas of interest;
 - b) to respond to requests for new products from Client Agencies;
 - c) to designate Data Providers and Host Agencies and identify what products will be generated and disseminated by each;
 - d) to provide a central coordination point for SCOPE-NWC activities and point of contact for all external enquiries;
 - e) to liaise with the user community, data providers and other WMO groups and initiatives as required to ensure efficient and effective operation with no duplication of effort.

Benefits

15. Benefits of this approach will be:
- a) Improved access to satellite data by member states;
 - b) Reduced operating costs associated with technological change and software upgrades;
 - c) Reduced training overheads;
 - d) Improved cooperation between NMHSs through access to shared products.

Potential Further Actions

16. A possible action plan is as follows:
- a) establish a working group;
 - b) finalise the concept of operations;
 - c) define selection criteria for products and generic requirements to be satisfied;
 - d) agree on a preliminary set of products;
 - e) establish a pilot project, in consultation with SWFDP.
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