

WORLD METEOROLOGICAL ORGANIZATION

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COMMISSION FOR BASIC SYSTEMS  
OPEN PROGRAMME AREA GROUP ON INTEGRATED  
OBSERVING SYSTEMS

ITEM: 8.1

INTER-PROGRAMME EXPERT TEAM ON SATELLITE  
UTILIZATION AND PRODUCTS

FIFTH SESSION

Original: ENGLISH

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### **Review of the Nowcasting System Concept**

*(Submitted by Luiz A. T. Machado)*

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#### **Summary and Purpose of Document**

Weather services are more and more requested to provide a nowcasting service. There is a strong potential of the new satellite generation to support nowcasting. The key products for nowcasting are mainly produced by the Space Agencies. In addition, nowcasting products need to be available with very small delay and need to be combined with local geographical layers. In the IPET-SUP-4 a nowcasting system concept only based on satellite data was proposed. The proposal presented a system that can be easily implemented in weather services by using the concept of web services and geographical information system. The action taken was to consult the nowcasting working group and the convection-working group. This document presents how these actions evolved and present a recommendation.

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#### **ACTION PROPOSED**

The session is invited to:

- (a) Take note of the actions
  - (b) Evaluate the recommendation.
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## DISCUSSION

### Introduction

The proposed system was based in the following infrastructure: Space Agencies or other data providers need to develop a web service with all produced products for nowcasting, in a specific format, in high resolution. The local users access the data through an application that run locally in his computer where the data can be uploaded from the Space Agencies or Geonetcast stations. The system is able to organize all data in the nowcasting phases providing the basic tools for the analysis. Each institution may use the Nowcasting System, installing their own products and layers. This system allows regionalisation of the products, high spatial resolution, increasing the speed and response time of interpretation of the data. The users would be able to have visualization and analysis tools and configure the data access from different data provider.

### Comments from the Convection and Nowcasting working group.

Comments from Convection Working Group: “In your concept paper I am quite happy to see the Nowcasting phases following the CWG categorization of convection life cycle: pre-convective, convection initiation and mature convection. In weather services, using local networks (radar, surface observations) the tendency is to focus on other networks as soon as the convection has started. Our main feedback would be about the nowcasting system to have flexibility as much as possible to be able to have an integrated approach for the convection monitoring. You mention it in Chapter 3 with users having an option to add their local layers into the system. This is very important aspect to take care of. A sole satellite based system would lack the essential data needed for good nowcasting. CWG is a rather big group of convection experts, but also somewhat informal group without mandate to participate in projects. I see its role mainly as body of knowledge, and you being a part of the group may help you in identifying potential individuals or institutes willing to contribute to the project.”

The Nowcasting System Concept - IPET-SUP-4/Doc. 10.2 was presented to the WMO Nowcasting and Mesoscale Research Working Group during its last physical meeting in Boulder, CO (11-13 June 2018) and also discussed during the last teleconference (5 December 2018). During these interactions, it was shown the preliminary web platform <http://nowcasting.cptec.inpe.br/> and several questions were raised, such as who will support the system, do the Space Agencies agreed to provide this service, what are the costs involved. In summary, it was explained that this was only a concept of a system to be further developed as a project after evaluation and concept enhancement and adjusted. However, no further feedback was received up to this date.

#### **4. Suggested Actions.**

It is recommended to search for partnerships to prepare a prototype version to be tested locally before to be used worldwide. INPE and NOAA are good candidates to develop this prototype without great efforts, as they are cooperating with SIGMACast that is a platform close to this concept. In addition, EUMETSAT, through the Convection working group, could work together to improve the development as this group developed the nowcasting phase concepts and evaluate many satellite products to nowcasting.

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