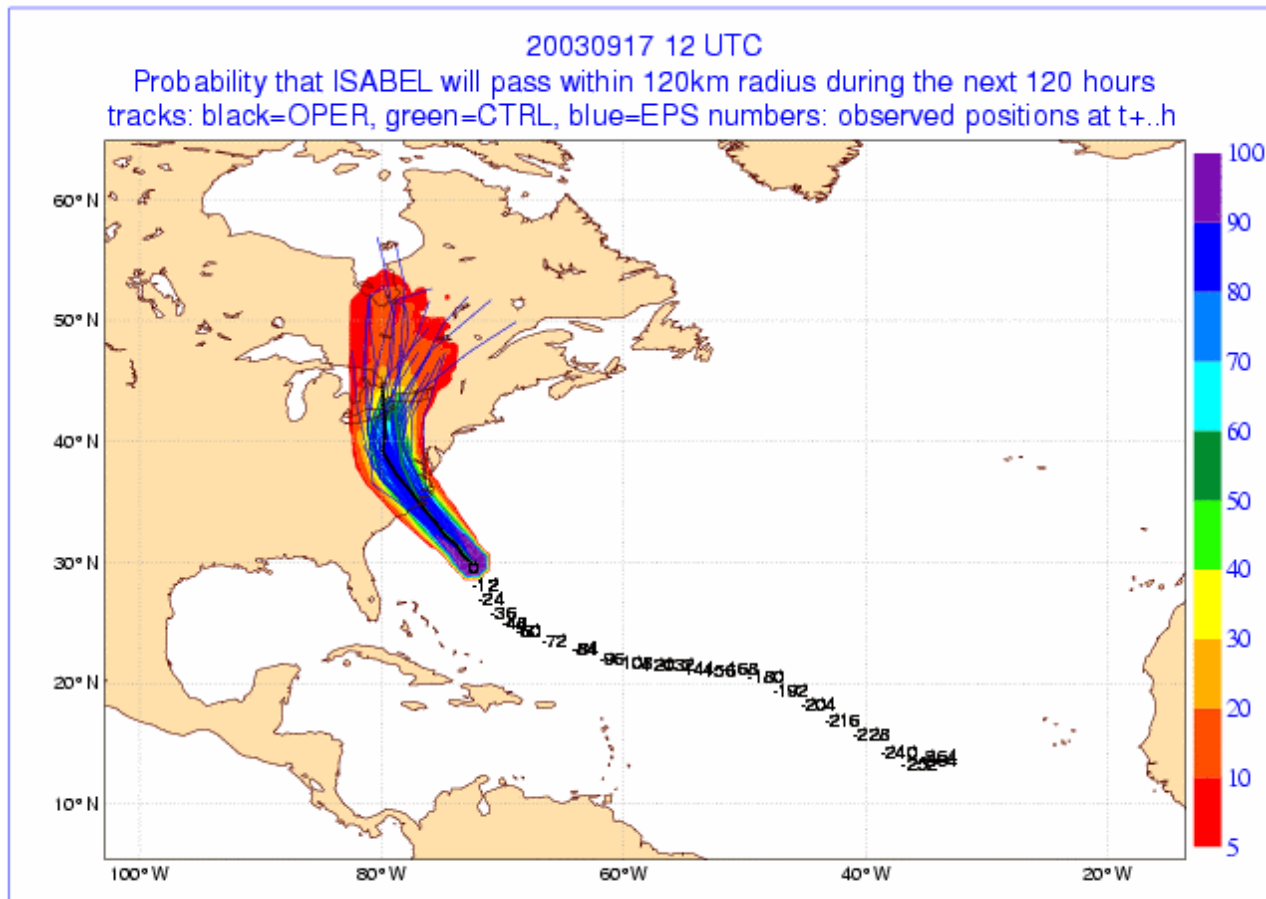


# Conclusions of the session: The future of satellites in meteorology



## Conclusions – WMO (1): summary

- **Space-based component of the WMO Global Observing System (GOS) is expanding quickly**
- **Provides invaluable satellite data, products and services, much more than ever before in the history of the World Weather Watch**
- **WMO to establish a new *WMO Space Programme* which will provide for both internal and external coordination necessary to maximize the exploitation of the new GOS**



# Conclusions – WMO (2): need for cooperation

*The need for cooperation is stronger than ever at:*

- National level
- Subregional level
- Regional level
- Global level

*Across many actors:*

- NMHSs, NHSs
- Academic community
- Development partners
- Government & private sector
- Medias
- Civil society

*In multiple domains:*

- observations
- communications
- data processing (incl NW)
- disaster prevention
- ...

*And across disciplines*



# Conclusions – ECMWF (1)

**For global medium-range and seasonal forecasts, our assessments are**

- **prospects**

- forecasts will continue to improve given improved *data, science & computing*,
- there is no evidence of a predictability limit, so far.

- **The operational satellite data requirement to realise the prospects for better forecasts and services is**

- ***An All-weather Capability To Measure All Important Weather***

- **Observational priorities**

- Dynamics profiles, T,  $\underline{v}$
- Thermodynamic profiles
- Boundary Conditions
- Trace Constituent Profiles

# Conclusions – ECMWF (2)

## European contribution to global EO

- In any endeavour, one should exploit one's strengths.
- Europe has considerable strengths in key areas of Earth Observation
- In the global EO system, the European contribution should emphasise the European strengths, but should also contribute to meeting the basic EO requirements

## Preparing the transition from Research to Operations

- Operational demonstration of the value of research missions makes a powerful argument for transition to operations  
– recent WMO / Agency initiatives on data access are v.welcome.
- Inexpensive new methods to assess the relative information content of different observing systems give results consistent (to date) with expensive data impact studies.

# Conclusions EUMETSAT (1)

- **Need for improvement in obtaining capabilities for space driven by**
  - **Short and medium-range forecast**
  - **Nowcasting and very short-range forecast**
  - **Long-range forecast (seasonal and interannual)**
  - **Climate**
  - **Emerging applications (e.g. operational oceanography, chemical weather)**
- **All disciplines demanding for both LEO and GEO capabilities**

## Conclusions EUMETSAT (2)

- **A structured requirement definition exists since 2000 for future EUMETSAT programmes, within WMO, ECMWF, NMHSs, EUMETNET/EUCOS**
  - The basis is dialogue between application leaders/experts and remote-sensing/satellite experts
  - The process identifies priorities from the user side and observing techniques likely to meet these priorities
- **For LEO systems, a number of observing techniques are pending demonstration from demonstration mission (ESA earth explorer missions in particular)**
  - Real-time access to data from these missions is crucial for early assessment
  - WMO mechanisms are in place to encourage this
- **For GEO systems no European capability exists for demonstration missions (like GIFTS)**

# ESA Conclusions/Questions

- **Involvement of Met organisations in GMES ?:  
water management, air pollution, ...**
- **GMES operational organisation (and funding) ?  
E.g. DG space, dedicated organisation**
- **Use of MTG or post Metop for new missions  
(precipitation, ADM, ...)**

# Conclusions discussion

- **Presentations given here and conclusions of the meeting, to be made available (EMS website)**
- **Co-operation at all levels, across actors, in multiple domains and across disciplines**
- **Invest in assimilation of satellite data (cost of space segment is of the order of 4.5 billion Euros)**
- **Real-time use is important to demonstrate the validity of new instruments (distribution of data)**
- **Need for geostationary demonstration missions**

## Conclusions discussions (2)

- **High level of consistency reflecting a fruitful dialogue between responsible agencies**
- **How to organise continuity (transfer to operational and recurrent funding)**
- **Need to harmonise GEO as far as possible**
- **How to reduce barriers to access to satellite data ?**
- **Need to develop services based on satellite data in order to secure the funding**
- **Develop programmes to facilitate operational distribution of satellite data (high speed network, ground stations)**
- **Need for overlap of measurements from different systems**

# Conclusions discussions (3)

- **Next steps for this discussion ?**

The European Meteorological Society  
(EMS)  
thanks all participants  
to this discussion

