

ESSENTIAL NEED FOR SATELLITE C BAND FOR METEOROLOGICAL AND EARTH OBSERVATION ACTIVITIES

24th ECC PT1 MEETING
Mainz, 12 – 14 December 2006

ECC PT1(06)258

Date issued: 11 December 2006

Source: EUMETNET¹, GEO², WMO

¹ **EUMETNET** is a network grouping 21 European National Meteorological Services from Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom and 6 other associated countries, Bulgaria, Croatia, Czech Republic, Romania, Slovak Republic and Slovenia. (see : www.eumetnet.eu.org)

² **GEO** (Group on Earth Observations) is an intergovernmental body currently comprising 64 member countries, the European Commission and 43 participating international organisations, leading a worldwide effort to build a Global Earth Observation System of Systems (GEOSS) over the next 10 years that will work with and build upon existing national, regional, and international systems to provide comprehensive, coordinated Earth observations from thousands of instruments worldwide, transforming the data they collect into vital information for society (see :<http://www.earthobservations.org>)

ECC/PT1 is currently considering the whole 3400-4200 MHz frequency band as a candidate band for IMT systems identification.

The whole meteorological and Earth observations communities are heavily dependent on the use of satellite C-Band, to ensure, through commercial payloads, broadcasting of meteorological and disasters related information in areas where propagation conditions (e.g. heavy rain in tropical and equatorial zones) make impossible to use any other telecommunication support.

Most of these areas are outside Europe (Africa, Asia, Central and South America, Pacific) but the following information need to be stressed :

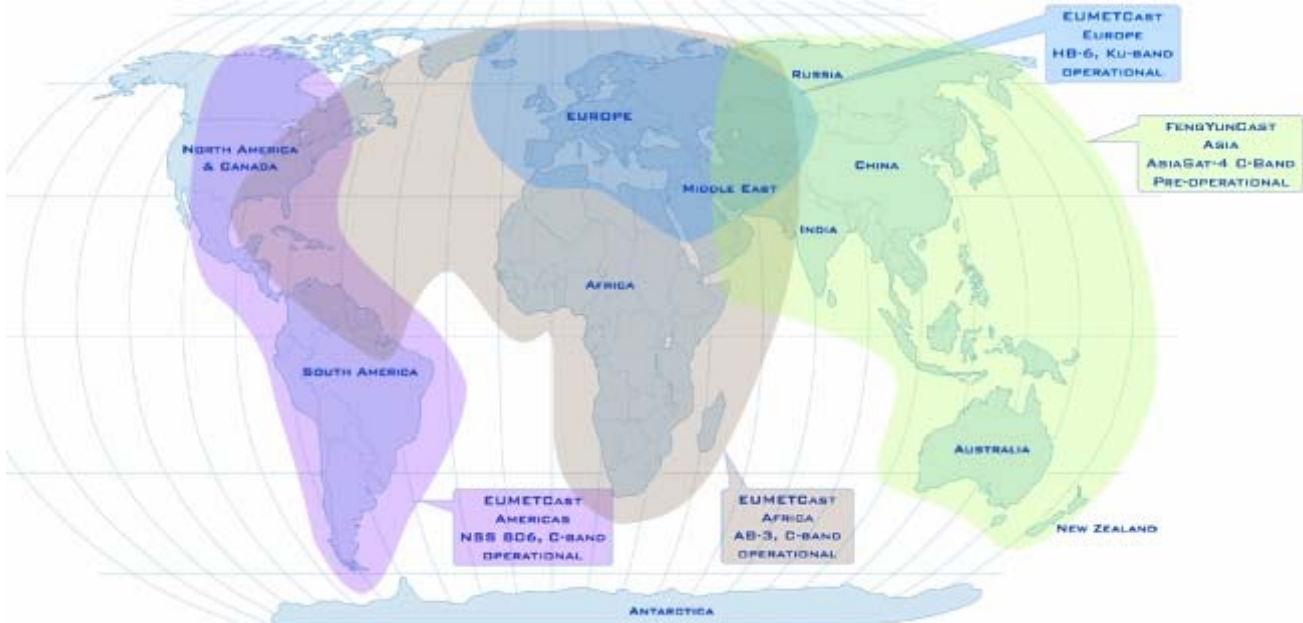
- The related information dissemination to these areas are related to International commitments of European countries through different international organisations such as the World Weather Watch (WWW) of the World Meteorological Organisation, the International Civil Aviation Organisation (ICAO) or intergovernmental bodies such as the Group on Earth Observations (GEO) that also translate in Europe as GMES.
- most of the overseas territories of European countries (e.g. in the Caribbean islands or in Pacific) rely on C-band satellite facilities to receive meteorological forecasts.
- In many instances, Europeans countries have been nominated as focal point for regional severe meteorological conditions survey that all relate to safety of life such as, for example :
 - o the French “La reunion” island that is responsible for cyclones survey for the whole Indian ocean
 - o the UK that is responsible for the SADIS system (Satellite distribution system for information relating to Air Navigation) over Europe, Africa, Middle East and Western Asia under the ICAO WAFS
 - o France that is responsible for meteorological data dissemination over western African countries

- The monitoring of such C-band broadcasting from Europe implies to also receive these C-Band emission at the origin point (i.e. in Europe) to verify the transmissions. In most cases, such as SADIS, it is an obligation.
- most of the overseas territories of European countries (e.g. in the Caribbean islands or in Pacific) rely on C-band satellite facilities to receive meteorological forecasts.
- C-Band EUMETcast facilities in Europe are used as a backup to Ku-band in some essential meteorological centers.

Among others, one can cite the following systems using the C-Band satellite, that all take part of the WMO Global Telecommunication System (GTS) and Integrated Global Data Dissemination Service (IGDDS) and that will be integrated in the future **GEONETcast** :

- **EUMETCast** operated by EUMETSAT over Africa and Americas
- **PC-VSAT** operated by CMA(China) via Asiasat that will be soon upgraded to cover Asia and Pacific (so-called **Fengyuncast**)
- **ISCS** operated by the USA also supporting ICAO WAFS weather forecasts for aviation in North, Central America and Caribbean, as well as in the Pacific
- **RETIM-Africa** operated by Meteo France covering western Africa
- A number of national systems (Thailand, Indonesia, Russian Federation...)

The following figure describes the current coverage of EUMETcast and Fengyuncast.



Indeed, these applications are not making use of the whole 3400-4200 MHz range but are currently using few channels, mainly in the 3600-3800 MHz band.

However, it is obvious that this frequency range is ESSENTIAL for these systems that all relate to governmental use and commitments and that cannot be put at risk by a global IMT identification in the 3400-4200 MHz range (Also keeping in mind the Agenda item 1.9 “syndrome”).

Conclusion

As important and essential users of satellite C-Band facilities that relate to safety of life, EUMETNET, WMO and GEO are opposed to see a global worldwide IMT identification in the 3400-4200 MHz band that would not take into account the essential need of C-Band for satellite communications in large areas of the globe.