CGMS-XXXII
WMO WP-3
Prepared by WMO
Agenda item: IV/1

MATTERS RELATED TO APT AND WEFAX AND CONVERSIONS

(Submitted by WMO)

Summary and purpose of document

This document describes the status of activities related to the conversion of the APT/WEFAX services from analogue to digital scheduled to occur during the decade.

ACTION PROPOSED

CGMS Members to update the Status for LRIT/LRPT conversion for satellites in polar and geostationary orbit as contained in the Appendix.

Appendix: Status for LRIT/LRPT conversion for satellites in polar and geostationary orbit

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DISCUSSION

APT/WEFAX Conversion

1. The Appendix shows the latest status (May 2004 prior to CGMS-XXXII) for LRIT/LRPT conversion for satellites in polar and geostationary orbit. Similar tables were reviewed at the thirty-first session (November 2003) of CGMS where the satellite operators discussed the dates when the new digital services would commence for their satellite systems and the duration of a transition period when both analogue and digital services would be available. The tables are also available on Internet through the WMO Space Programme home pages at <http://www.wmo.int/hinsman/APT_WEFAXstatus.html>.

2. An analysis of the Appendix for LRIT conversion indicates in WMO Regions I (Africa) and VI (Europe) that the operation of WEFAX service was terminated (TBC by EUMETSAT) in 2003 and LRIT service started from 2004 by Meteosat-8 (former MSG-1). WMO Regions II (Asia) and V (Southwest Pacific) will have a two-year overlap starting in 2004. For WMO Regions III and IV (South, Central and North America including the Caribbean), time-sharing using GOES-12 (East) is in place since October 2003 and will continue for at least a year. Timesharing using GOES - West is planned to start the 2rd quarter of 2004. Full LRIT only (no WEFAX) is planned to begin late 2005. The Indian Ocean area (RA II) has no overlap starting in 2003. It should be recalled that CGMS Members have already indicated to WMO their intention to provide for a three-year overlap.

3. An analysis of the table for LRPT conversion shows that the morning (AM) satellite will start LRPT in 2006 while the afternoon (PM) satellite will transmit two data streams (AHRPT and X-band) starting in 2009. The FY-3 series will only transmit AHRPT and X-Band starting in 2004. The satellites of METEOR-3M system will provide LRPT and AHRPT data direct broadcast to the user stations. There will be no transition period for the AM orbit or PM orbit separately and the present combined CGMS satellite operators' plans indicate that it may be necessary to have at least three different receiving stations to receive AM and PM satellite data.

4. A more detailed discussion on the transitions in polar orbit can be found in WMO WP-26 including the issue of equator crossing times. Additionally, WMO WP-20 contains the latest status in the development of the concept for Alternative Dissemination Methods (ADM). The growth in data volume and use of X-Band by polar orbiting satellite operators strongly supports use of ADM.

5. CGMS XXXI Action Item 31.43 asked WMO to propose modifications to the layout of the LRIT/LRPT transition tables in order to take ADM into account. The last column in each table in the Appendix allows the inclusion of status information for ADM, i.e NA: not available, SN: service name, PC: planned with confirmation, TNC: tentative with no confirmation.

STATUS FOR LRIT CONVERSION, SATELLITES IN GEOSTATIONARY ORBIT

(update May 2004)

Operator	Satellite	Launch (M/Y)	Service	Start	Stop	ADM service (NA, SN, PC, TNC) *
EUMETSAT	Meteosat 5	03/1991	WEFAX	03/91		
	Meteosat 6	11/1993	WEFAX	11/93		
	Meteosat 7	02/1997	WEFAX	07/97	12/03	
	MSG 1	01/2002	LRIT	01/04	2010	
	MSG 2	2002	LRIT	2005	2008	
	MSG 3	2007	LRIT	2008	2013	
India	INSAT I-d	06/1990	None			
	INSAT II-a	07/1992	None			
	INSAT II-b	07/1993	None			
	INSAT II-e	---	None			
Japan	GMS-5	03/1995	WEFAX	06/95	2004	
	MTSAT-1R	2004	WEFAX LRIT	2004 2004	2005 2009	
	MTSAT-2	2005	LRIT	2009	2014	
USA	GOES-8	04/1994	WEFAX/LRIT	11/94	04/03	
	GOES-9	05/1995	WEFAX/LRIT	01/96	05/03	
	GOES-10	04/1997	WEFAX/LRIT	06/97		
	GOES-11	05/2000	WEFAX/LRIT	09/00		
	GOES-12	07/2001	WEFAX/LRIT	04/03		
	GOES-N	12/2004	WEFAX/LRIT			
	GOES-O	2007	WEFAX/LRIT			
	GOES-P	2008	WEFAX/LRIT			
Russian Federation	Elektro-1	11/94	WEFAX			
	Elektro-2	2003	WEFAX			
	Elektro-3	TBD	LRIT			
China	FY-2B	06/00	WEFAX	01/01		
	FY-2C	2003	LRIT	2003		
	FY-2D	2006	LRIT	2006		
	FY-2E	2009	LRIT	2009		

* NA: not available, SN: service name, PC: planned with confirmation, TNC: tentative with no confirmation

STATUS FOR LRPT CONVERSION, SATELLITES IN POLAR ORBIT

(updated May 2004)

Operator	Satellite	Launch (M/Y)	Service	Start	Stop	ADM service (NA, SN, PC, TNC)
EUMETSAT	Metop-1	12/2005	LRPT	2006		
	Metop-2	12/2009	LRPT	2010		
	Metop-3	06/2015	LRPT	2015		
USA	NOAA-12	05/1991	APT	05/91		
	NOAA-14	12/1994	APT	12/94		
	NOAA-15	05/1998	APT	05/98		
	NOAA-16	09/2000	APT	09/00	11/00	
	NOAA17	06/2002	APT	06/02		
	NOAA-N	06/2004	APT	06/04		
	NOAA-N'	03/2008	APT	03/08		
	NPP – NPOESS Preparatory Project	10/2006	HRD (X-band) only			
	NPOESS-1	11/2009	LRD(AHRPT) and HRD(X-band)			
	NPOESS-2	06/2011	LRD(AHRPT) and HRD(X-band)			
	NPOESS-3	06/2013	LRD(AHRPT) and HRD(X-band)			
	NPOESS-4	11/2015	LRD(AHRPT) and HRD(X-band)			
	NPOESS-5	01/2018	LRD(AHRPT) and HRD(X-band)			
	NPOESS-6	2019	LRD(AHRPT) and HRD(X-band)			
China	FY-1C	05/1999	No APT or LRPT. CHRPT only			
	FY-1D	05/2002	No APT or LRPT. CHRPT only			
	FY-3A	2004	AHRPT and X-band only			
	FY-3B	2006	AHRPT and X-band only			
Russian Federation	Meteor 2-21	08/1991	APT	08/91		
	Meteor 3-5	08/1991	APT	08/91		
	Meteor-3M N1	12/2001	LRPT and AHRPT			
	Meteor-3M N2	2006	LRPT and AHRPT			
	Resourse-01-N4	---	APT			

* NA: not available, SN: service name, PC: planned with confirmation, TNC: tentative with no confirmation