
Technical Sub-Group on Direct Broadcast Packages & RARS Report on RARS

Jérôme Lafeuille
& Liam Gumley

Participants

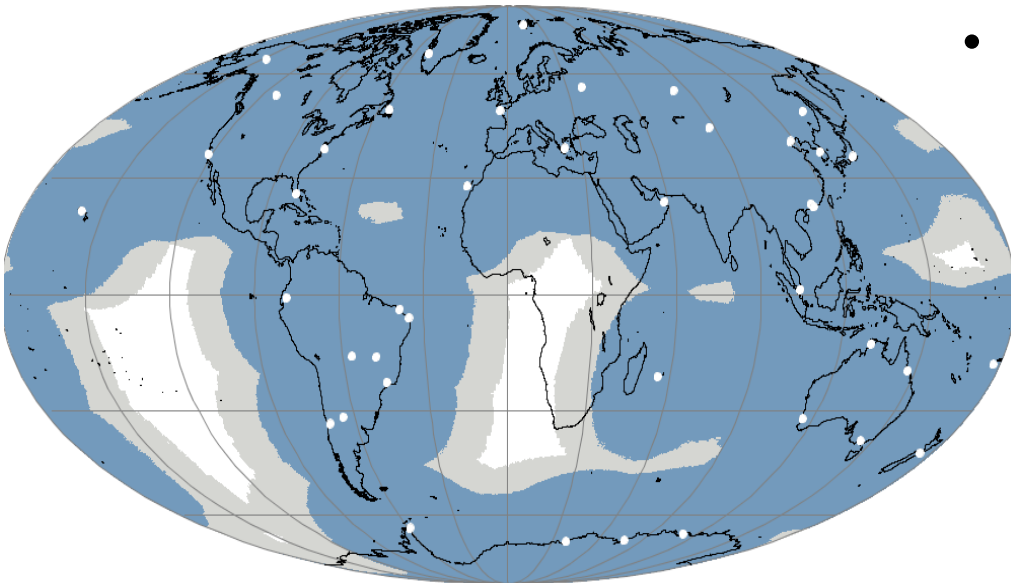
- Liam Gumley & Jérôme Lafeuille (Co-chairs)
- Nathalie Selbach
- Nigel Atkinson
- Anna Booton
- Kathy Strabala
- Graeme Martin
- Rebecca Cintineo
- Pascale Roquet
- Katerina Melnik
- Geoff Cureton
- Ashim Kumar Mitra
- Scott Mindock
- Su-Hyun Jung
- Jeong-Sik Kim
- Jae-Dong Jang
- Dieter Klaes
- Kelvin Brentzel
- Akira Okagaki
- Mitch Goldberg

Topics discussed

- RARS status (ATOVS data)
- RARS evolution (hyperspectral sounder data)
 - Data coding
 - GTS dissemination
- Convergence between RARS and NOAA DBRTN
- Keeping the RARS initiative on track
 - RARS Implementation Group

RARS Network Status

- RARS currently provides retransmission of ATOVS L1c, from 42 stations covering 80% of the globe, within 30 min



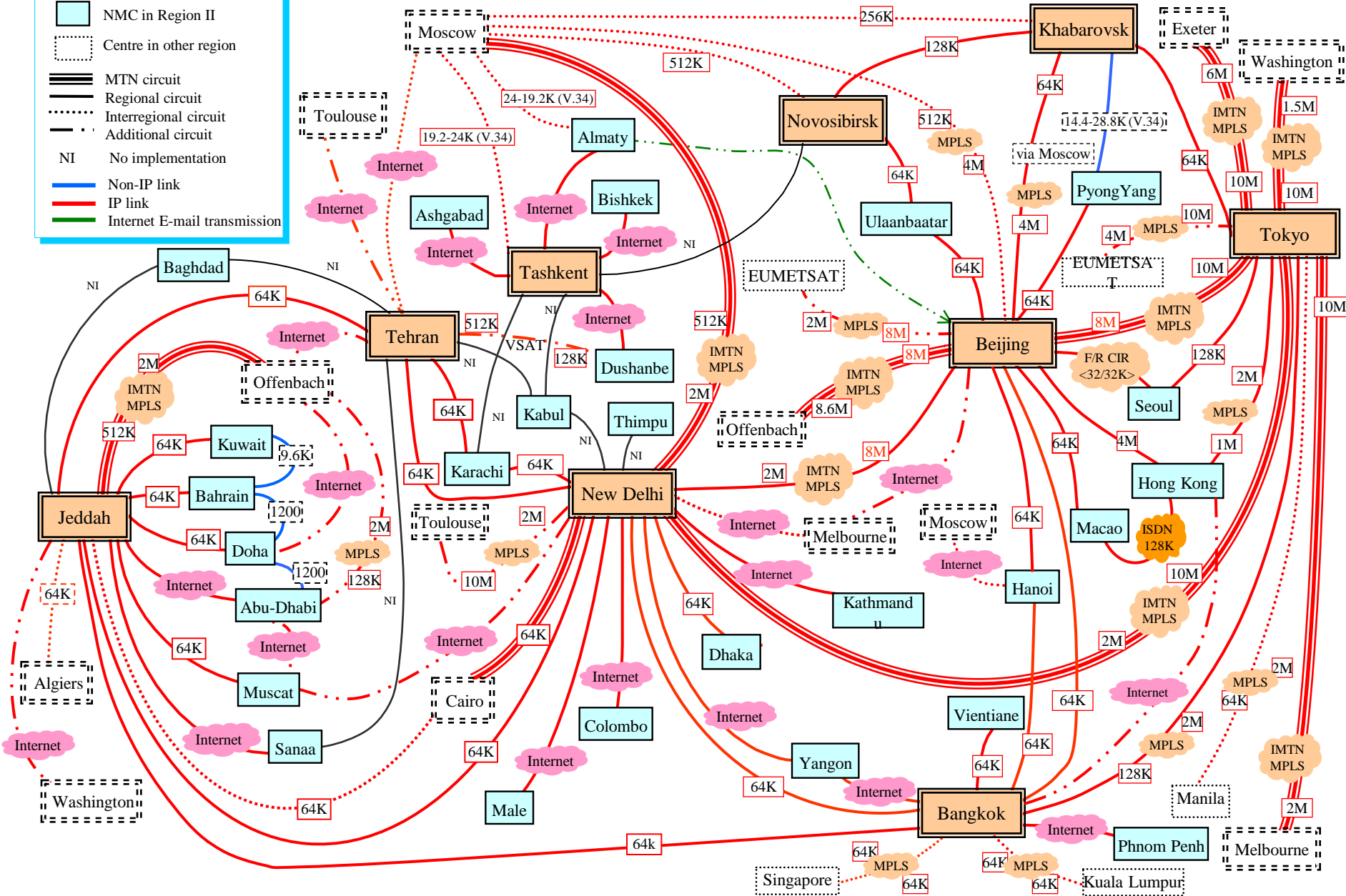
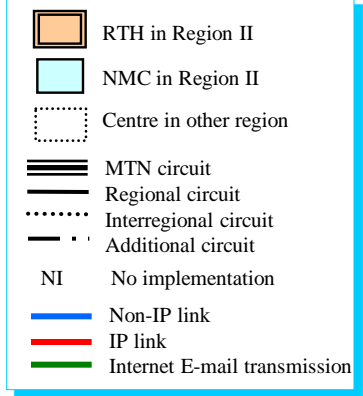
- 3 components:
 - EARS (18 stations)
 - Asia-Pacific (16 stations)
 - Brazil/Argentina (8 stations)

What is RARS ?

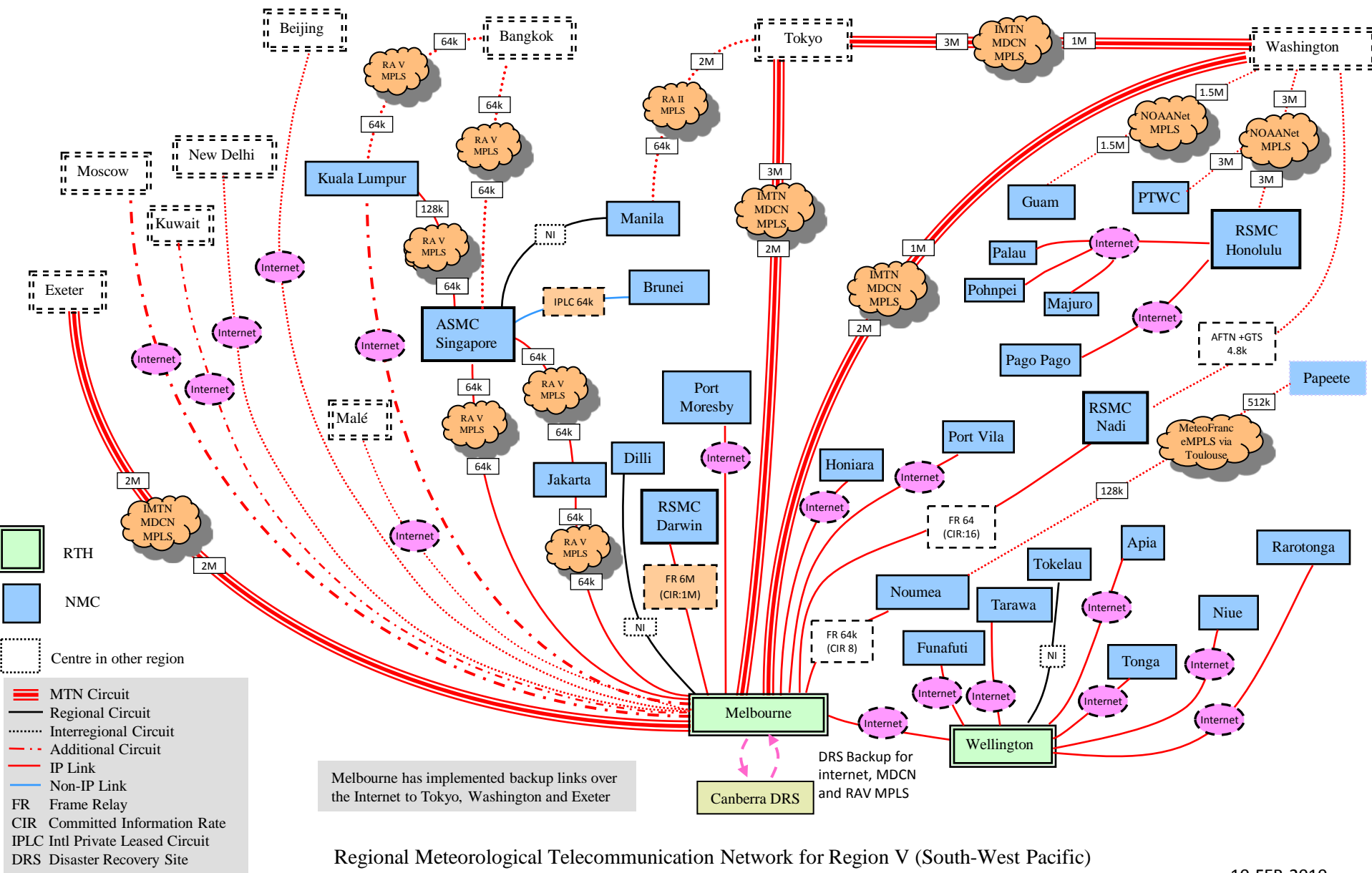
- A network of Direct Readout stations sharing their data in near real time ...
- ... following a set of procedures and best practices to ensure interoperability, global availability and timeliness of RARS products
- Key requirements:
 - Use current AAPP and deliver L1c in BUFR
 - Send over the GTS (and possibly other means) within 30 min
 - Identifiers, Bulletin headings and WMO filename convention
 - New codes and headings defined for IASI, CrIS, ATMS

Convergence between RARS and DBRTN (1)

- NOAA/DBRTN and WMO/RARS are willing to share their data
- DBRTN data would be sent to GTS via EUMETSAT and DWD
- Issue 1: Check NCEP-RARS compatibility of BUFR formats
Action: NOAA to review what is needed in BUFR format for CrIS, ATMS and IASI and determine if they could use AAPP BUFR (i.e. RARS format) instead of NCEP BUFR (*Mitch Goldberg*)
Action: NOAA to send samples of NCEP BUFR data to Nigel Atkinson (*Liam Gumley*)
- Issue 2: Acceptable data rates for the GTS
Action: WMO will inform the group on the data rates supported by the various links of the GTS (*Jérôme Lafeuille*)



Regional Meteorological Telecommunication Network for Region II (Asia) sub-group
 Current status as of 26 September 2012

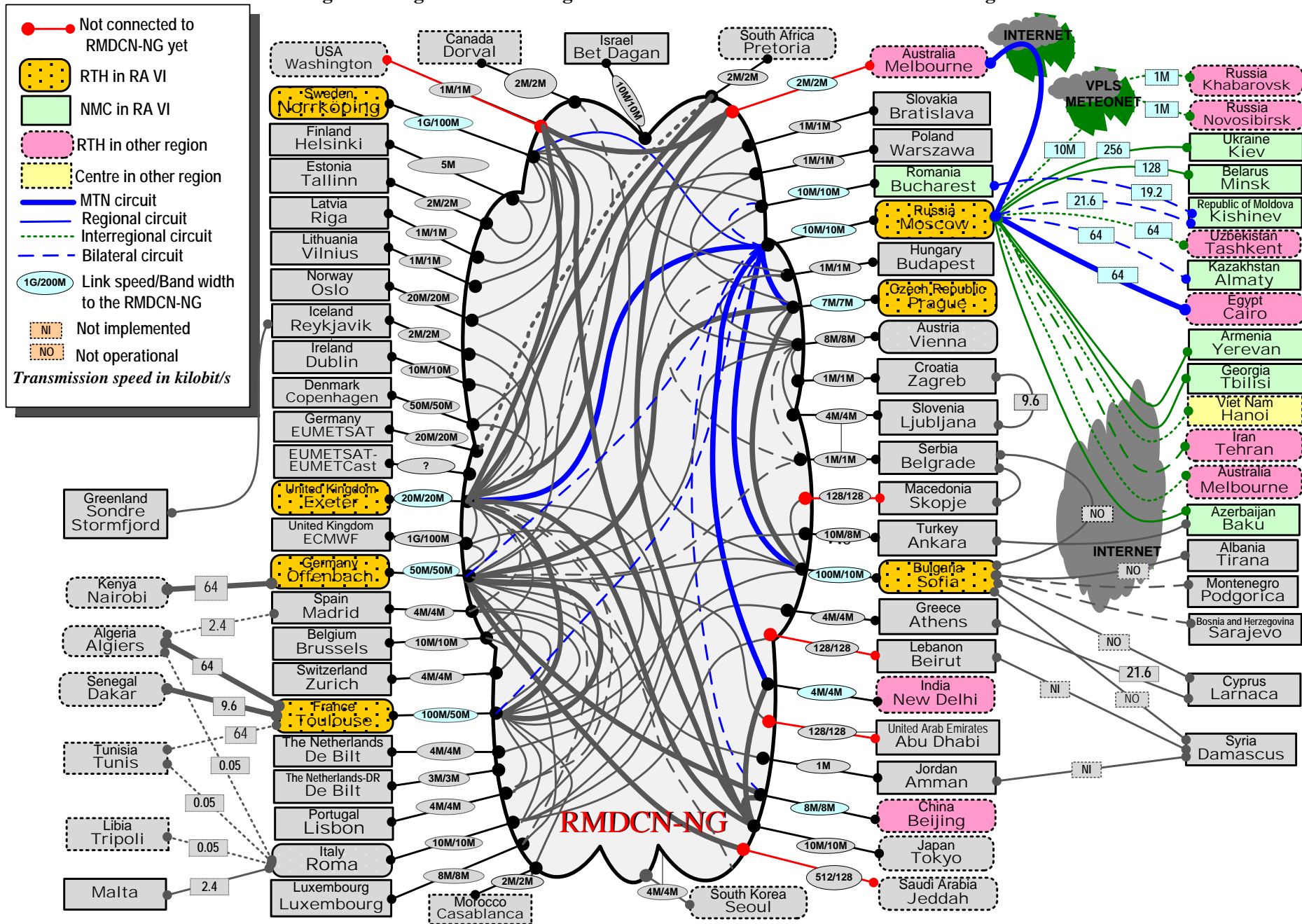


Regional Meteorological Telecommunication Network for Region V (South-West Pacific)

10-FEB-2010

Figure 1: Regional Meteorological Telecommunication Network for WMO Region VI

13.03.2014

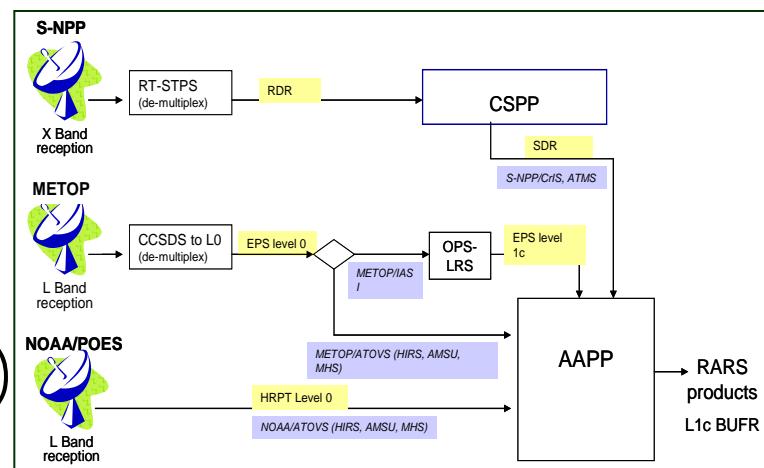


Convergence between RARS and DBRTN (2)

- Issue 3: Ensure interoperability of RARS and DBRTN
 - **Action: SSEC, NOAA, EUMETSAT, WMO should coordinate on data formats, software versions, and latency requirements and come up with a plan to provide the DBRTN products for inclusion in RARS .**

Draft WMO Guide on (D)RARS

- **D**irect **R**eadout **A**nd **R**e-distribution **S**ystem for LEO satellite data
- Addressing standard/recommended practices for (D)RARS operators and users including:
 - Processing software
 - Product format
 - Product distribution
 - Service requirements (availability, timeliness, quality control)
 - User information
 - Maintenance and Operations
 - Procedure for station inclusion/removal



Convergence between RARS and DBRTN (3)

- Action: The draft Guide to RARS which defines the RARS procedures, software, formats, data exchange convention, service requirements, etc. should be finalized, published, and shared widely with potential data providers (*Jérôme Lafeuille*)

Keeping RARS on track : governance

- RARS matters are addressed at ITSC, at CGMS-WGI, and at NAEDEX-APSDEU
 - Transition to advanced sounders and convergence with DBRTN require special attention
- **Action: There is a need for reactivating the RARS Implementation Group within WMO with a broader scope to include NOAA DBRTN (*Jérôme Lafeuille*)**

**Thank You
for your support
to the (D)RARS !**

More background

Progress on RARS since ITSC-18

- Additional stations providing NOAA/ATOVS RARS products
 - New-Delhi, Chennai (IMD) in test mode
 - Tahiti (Meteo-France) to become operational within a few days
 - Easter Island planned through agreement between CLS-Argos and Chile
- A number of stations (24 out of 42) providing METOP/ATOVS
- Hyperspectral IR sounder products
 - EUMETSAT provides IASI and CrIS products on a pilot basis
 - Codes and identifiers proposed for these new products
 - Estimation of data rates (requested by APSDEU/NAEDEX)
- CGMS-41 was informed on the NOAA project of Real-Time Network for Low-Latency Infrared and Microwave Sounder Data
 - Recommended convergence with RARS

Resources on RARS

- WMO Space Programme (www.wmo.int/sat)
=> Data access and use => RARS
(or Google: WMO+RARS)
 - [RARS network and status](#)
 - [RARS Coding Summary](#)
 - [RARS Operators Standards](#)

About RARS coding issues

- Contents of [RARS Coding Summary](#)
 - Station coordinates
 - BUFR description section elements: (Sub)centre ID, data (sub)category
 - GTS Headings $T_1T_2A_1A_2ii$ CCCC YYGGgg (BBB)
 - Filename elements
 - With examples and links to relevant WMO Manuals and Code Tables
- BUFR Data sub-category for new instruments
 - **Hyperspectral IR= 30, Microwave sounder=40**
- GTS Heading: New (draft) entries for A_1
 - **IASI=Q, CrIS=C, ATMS=S**
- Recommended registration in « Vol. C1 »