Infrastructure and implementation of AMDCN on GISC Tokyo
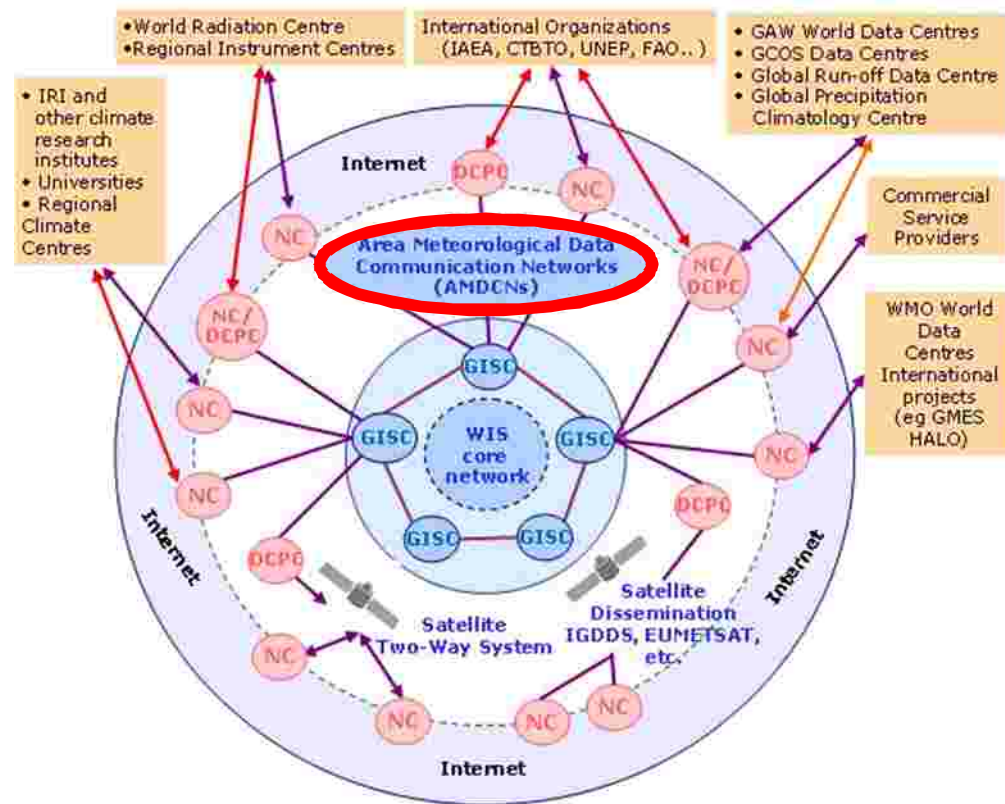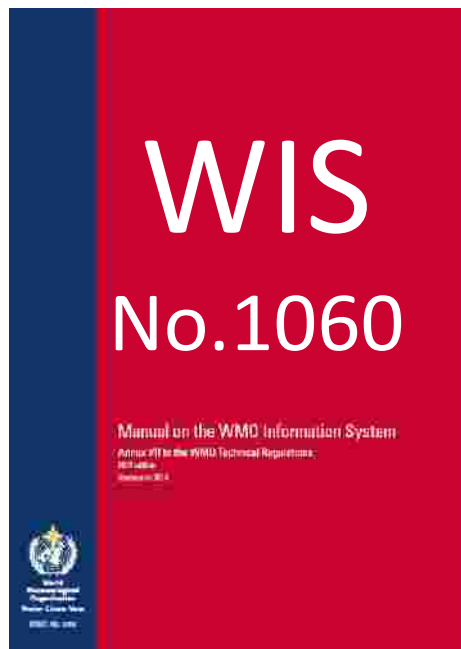
Yoritsugi OHNO

WIS Workshop in 2016
6th-8th Dec. 2016 in JMA HQ

AMDCN

Area Meteorological Data Communication Network: (AMDCN)

Refer to Manual on WIS (WMO No. 1060)

- ## 1.3 INTERACTION AMONG WMO INFORMATION SYSTEM CENTRES

  Global Information System Centres shall connect to other GISCs through the WIS Core Network, which is based on the Main Telecommunication Network (MTN). Data, products and metadata shall flow to a GISC from the DCPCs and NCs that are within its area of responsibility. An Area Meteorological Data Communication Network (AMDCN) **shall** connect each GISC to DCPCs and NCs in the GISC area of responsibility. An AMDCN may span multiple Regional Meteorological Telecommunication Networks (RMTNs) and parts thereof.
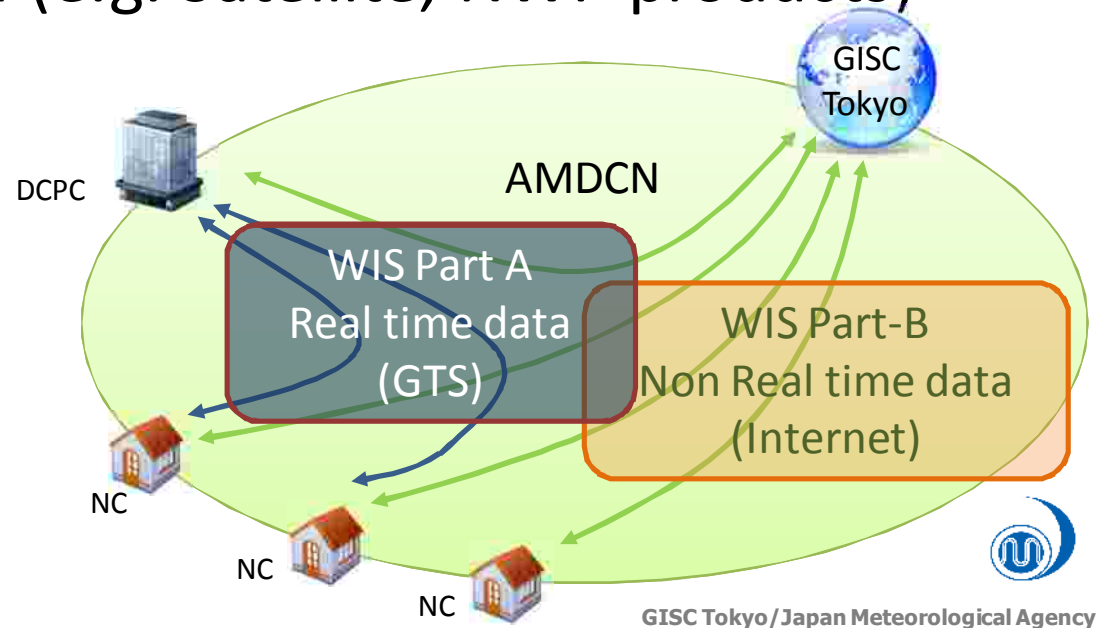
What role of AMDCN

- Exchange data, product and metadata during GISC, DCPC and NC.

- According to WIS Technical Specifications for GISC,DCPC and NC on the Manual on WIS
  - Uploading metadata for data and product;
  - Uploading of data and products;
  - Downloading files via dedicated networks;
  - Downloading files via non-dedicated networks;
  - Downloading files via other methods;

- DCPC and NC already have some links as GTS.

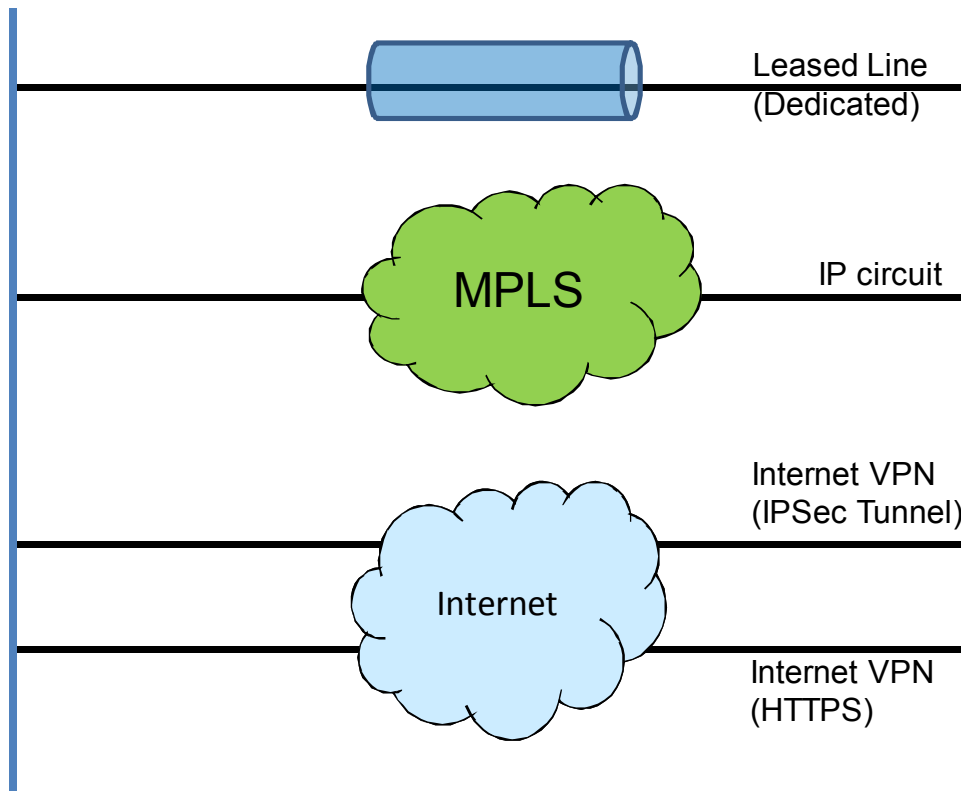- They can use current GTS as AMDCN.

GTS and AMDCN on GISC Tokyo

- GTS
  - Real time data (e.g. Warning, SYNOP, TEMP)

- AMDCN
  - Real time data -> GTS
  - Non real time data (e.g. Satellite, NWP products)

GISC
Tokyo

DCPC

AMDCN

WIS Part A
Real time data
(GTS)

WIS Part-B
Non Real time data
(Internet)

NC

NC

NC

GISC Tokyo/Japan Meteorological Agency

Connection Types

National Centre (NC)

GISC Tokyo

Leased Line (Dedicated)

MPLS

IP circuit

Internet VPN (IPSec Tunnel)

Internet

Internet VPN (HTTPS)

Cost

Expensive

$

Service level

High Availability
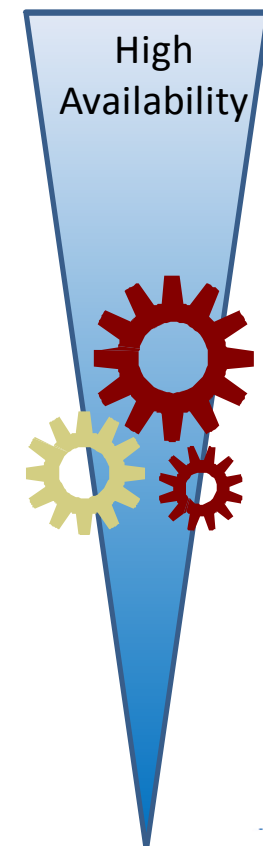
Low

Connection Types

Connection Types	Cost	Service Level	Protocol
Dedicated Circuit	High	High	TCP Socket, FTP
IP-VPN (MPLS)	High	High	TCP Socket, FTP
Internet VPN (IPsec Tunnel)	Low	Low	FTP
Internet VPN (HTTPS Upload)	Low	Low	HTTPS

Option for AMDCN of GISC Tokyo

GISC Tokyo

JMA needs to get budget.

FTP server (GTS)

Dedicated Circuit (Bilateral)

MPLS (NTT-Com)

100Mbps Best Effort

Prototype FTP server (for Internet)

CISCO1921

VPN Tunnel

Internet

CISCO

100Mbps guaranteed

Web system (for Internet)

HTTPS Upload

Internet

Subscription

Satellite data

Himawari8/9

1: Dedicated Circuit

You have to check whether your network provider can connect with Japan telecommunication company.

2: IPVPN (MPLS)

You have to check whether your organization can contract with NTT communications.

3: Internet-VPN (IPsec Tunnel)

We recommend to use CISCO router in order to establish the VPN link.

4: Internet-VPN (HTTPS)

Uploading data and downloading data by users.

5: Himawari Cast

Thank you!