# Collaborative development
# of WIS operational functionalities

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Magandang umaga

ตอนเช้าที่ดี   ใນຕອນເຊ້າທ່ີດີ

Good morning   সুপ্রভাত   မင်္ဂလာ ပါ

អរុណសួស្តី   صباح الخير

Chào buổi sáng   �သလီဗဲ်ဝအ်
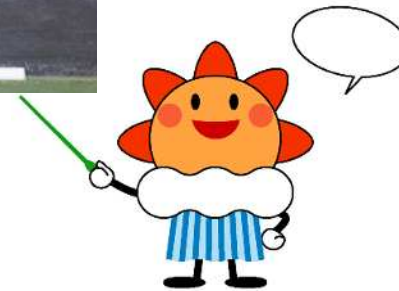
Guten morgen

"HARERUN"

# Outline

- WIS development milestones
- GISC Tokyo's AMDCN enhancement plan
- WIS backup arrangements
- WIS metadata management
- WIS monitoring development
- WIS competency
- Introduction to JMA's DCPCs
    - RSMC Tokyo - Typhoon center
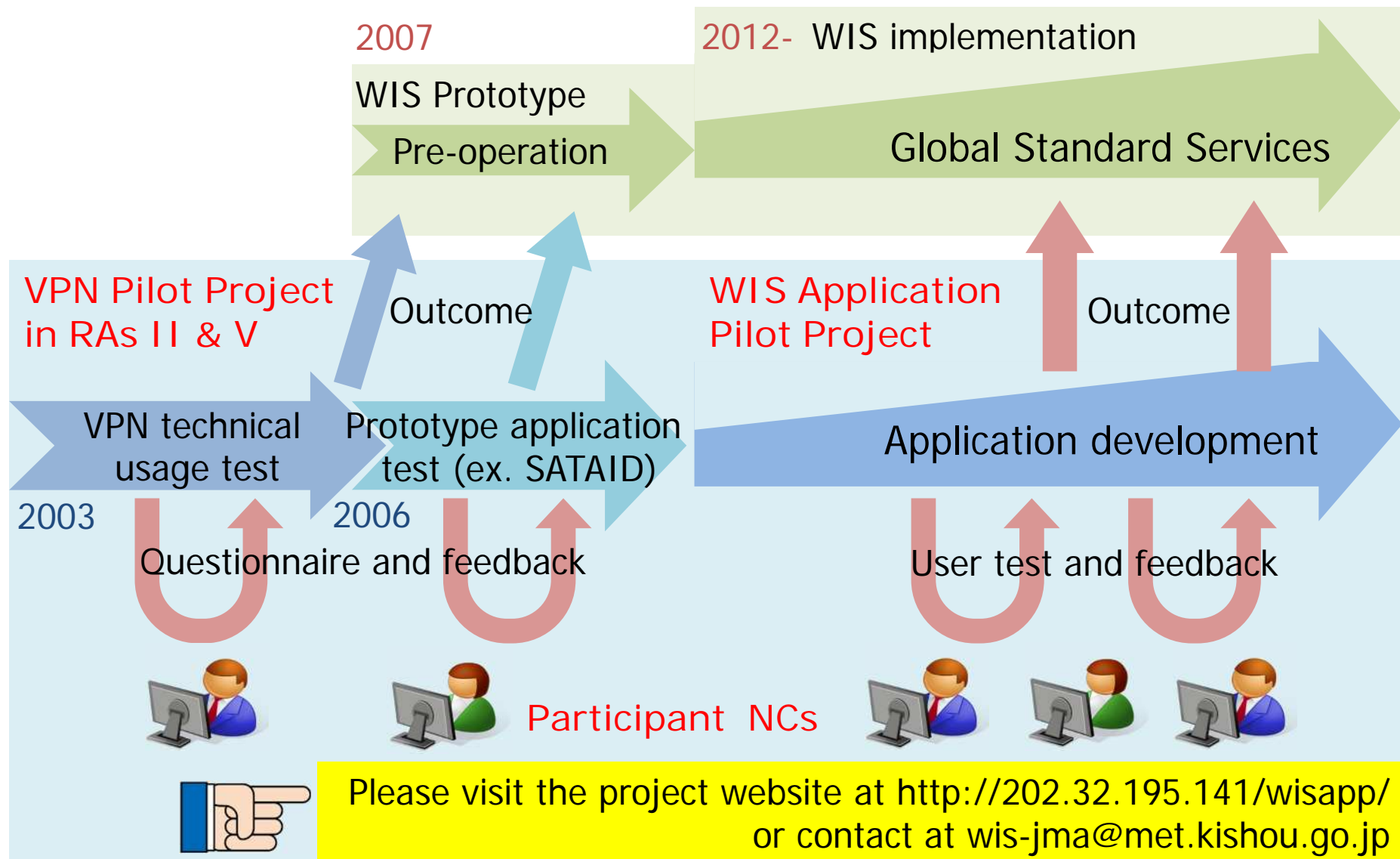    - HIMAWARI 8/9 (MTSAT next)

# WIS development milestones, contribution of user-participated pilot projects

# WIS development milestones

Nov 2014: 3rd JMA WIS workshop
Oct 2012: 2nd JMA WIS workshop
Jun 2012: Reformed PP-App started
Jan 2012: WIS manual became operational
Aug 2011: GISC Beijing, Offenbach and Tokyo
started operation as first 3 GISCs
Jun 2011: First 3 GISCs and 4 DCPCs were audited
Mar 2010: 1st JMA WIS workshop
Apr 2007: WIS was evolving in two parallel parts A and B.
Mar 2007: WIS prototype service started with SATAID (VPN-PP 2nd)
Oct 2005: FWIS was renamed WIS
Jun 2004: FWIS VPN Pilot Project started and continued through 2006
Dec 2002: CBS ext. session reviewed *The Future of the WMO Information Systems*
Nov 1999: Establishment of Inter-Commission Task Team (ITT-FWIS)

# Contribution of user participated Pilot Project

2007

WIS Prototype

Pre-operation

2012- WIS implementation

Global Standard Services

VPN Pilot Project in RAs II & V

Outcome

WIS Application Pilot Project

Outcome

VPN technical usage test

2003

Prototype application test (ex. SATAID)

2006

Application development

Questionnaire and feedback

User test and feedback

Participant NCs

Please visit the project website at http://202.32.195.141/wisapp/ or contact at wis-jma@met.kishou.go.jp

# 1st JMA WIS workshop in 2010

*International Workshop - Towards the Successful Implementation of WIS in Asia* was held in Tokyo 9-11 March 2010.
The aim was to share the WIS vision, technical specifications, the current status of WIS development. It is also expected that this Workshop will facilitate to identify and consolidate of the requirements related to WIS in Asian countries.

## 2nd JMA WIS workshop in 2012

*JMA Workshop on WIS Implementation* was held in Tokyo, 22-24 October 2012. The aim was to deepen understanding of the DAR services, and to share a clear view of the way to improve and implement WIS effectively.

# 3rd JMA WIS workshop in 2014

*JMA Workshop on WIS Implementation* is now held in Tokyo, 18-20 November 2014.  The workshop is attended by 18 participants from 9 NMHSs, also lecturers from CMA, DWD and the WMO secretariat.
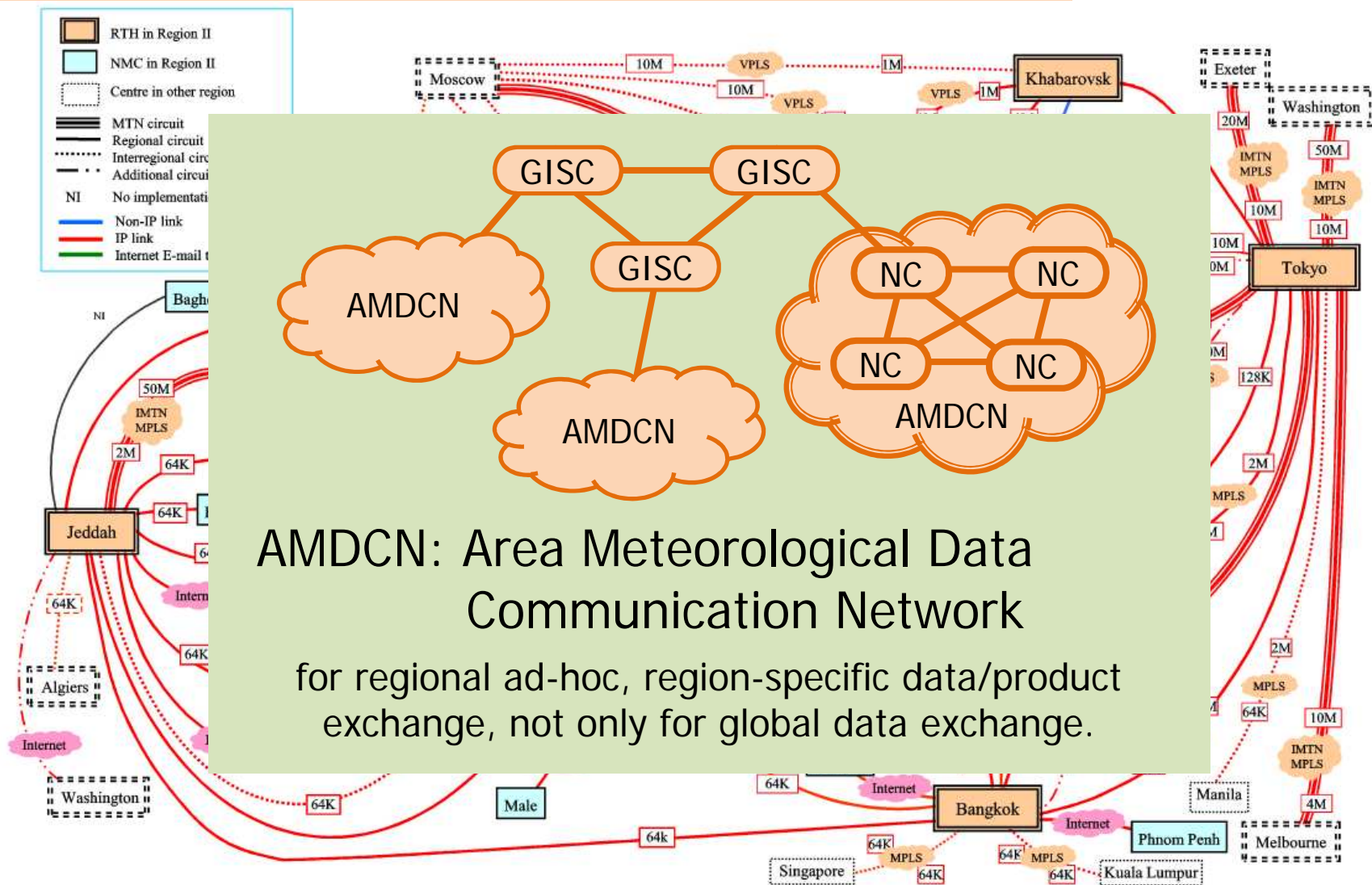
What is the aim this time?

Group photo (TBA)

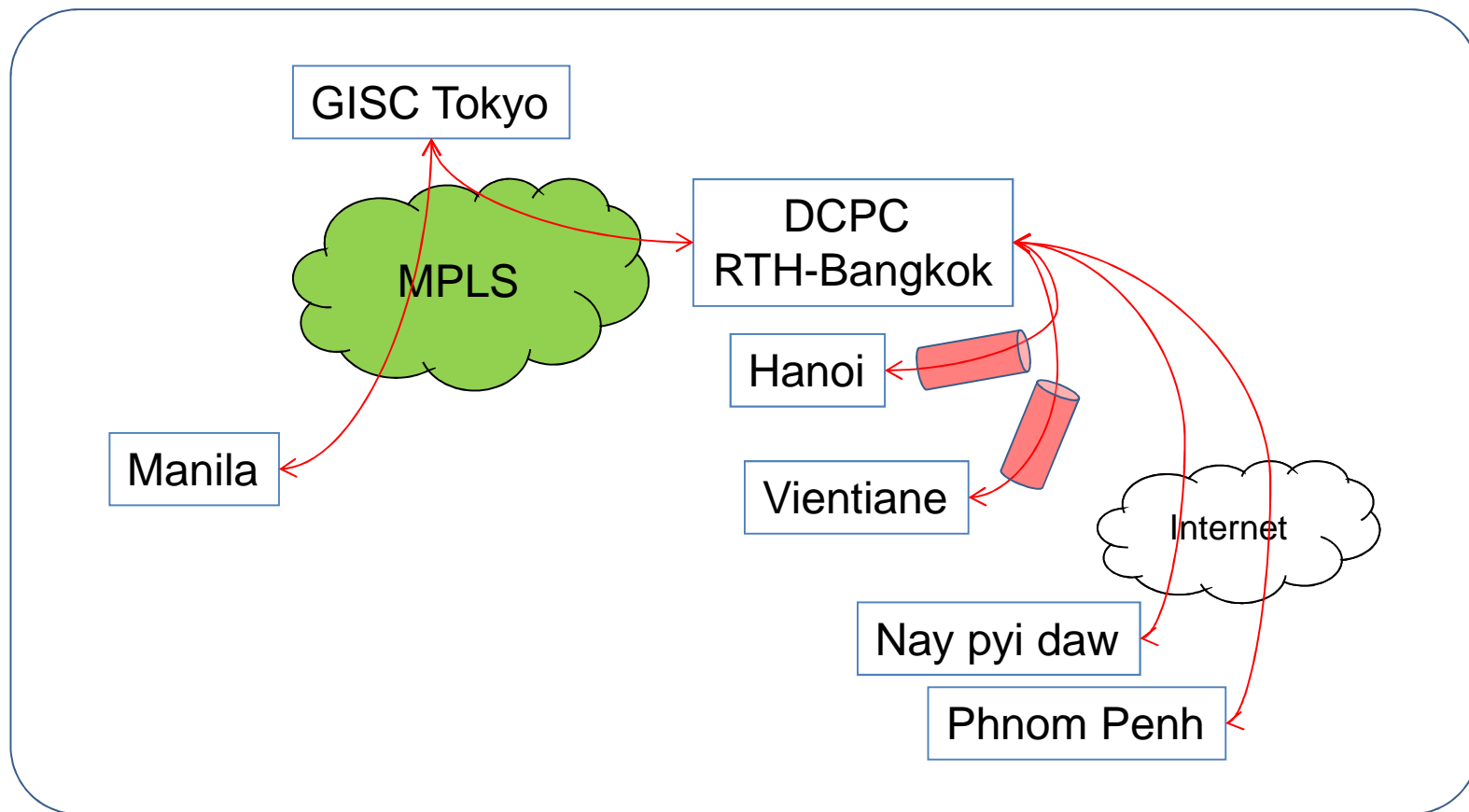# GISC Tokyo's AMDCN enhancement plan

# Current status of GTS for RAII



Regional Meteorological Telecommunication Network for Region II (Asia)
Current status as of 22 October 2014 (Based on the annual survey produced by RA-II EG-WIS)

AMDCN: Area Meteorological Data Communication Network

for regional ad-hoc, region-specific data/product exchange, not only for global data exchange.

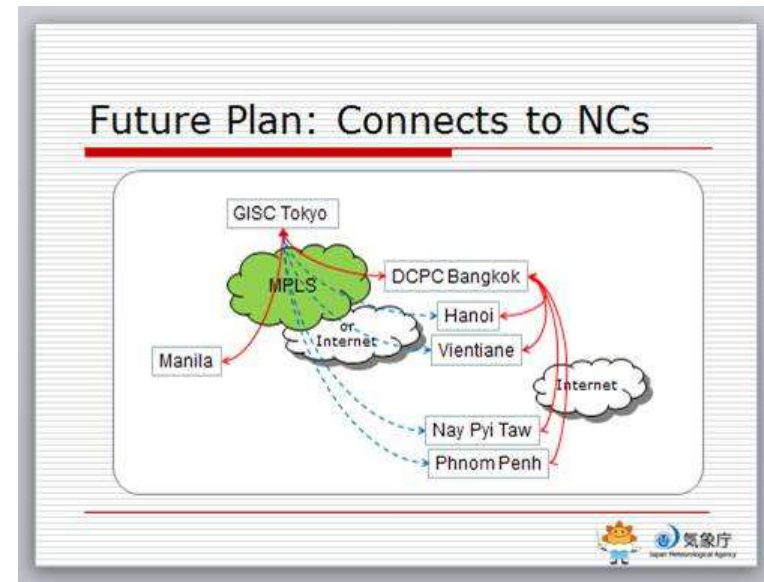# Current GISC Tokyo's AMDCN

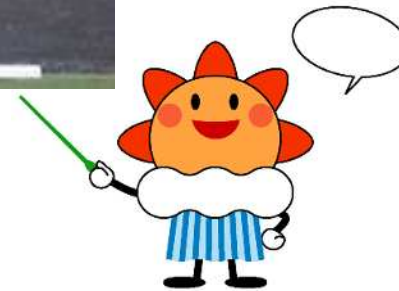Current GISC-Tokyo's AMDCN is operated in corroboration with RTH Bangkok.

## GISC Tokyo's AMDCN enhancement plan

GISC Tokyo plans to enhances AMDCN near future to achieve robust network and correspond to increasing data transaction in the regions.

Detailed information >>



>> Lesson 3 "Introduction to AMDCN" by Yoritsugi OHNO (JMA)

# WIS backup arrangements
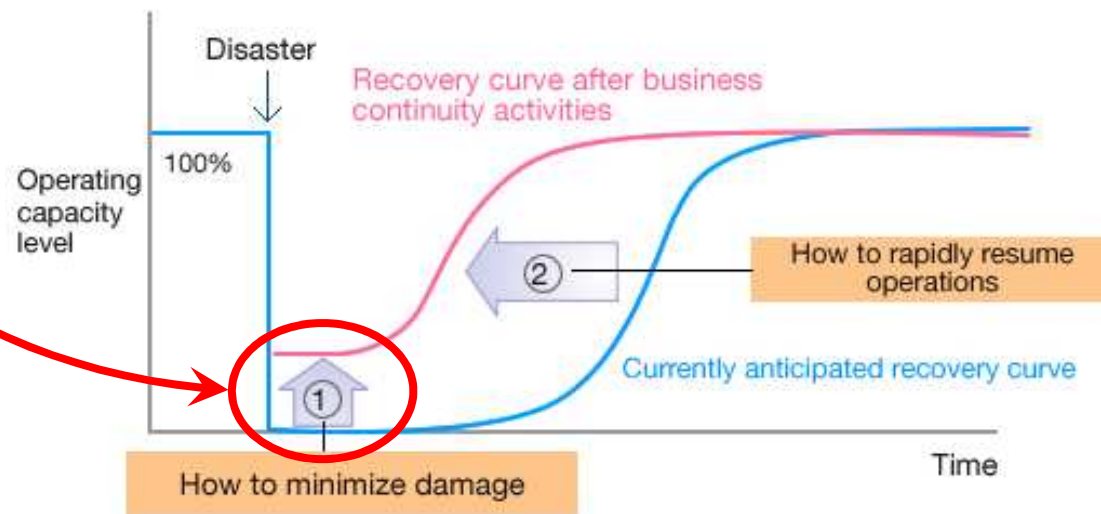
# Concept of Business Continuity Plan (BCP)

Two aspects of BCP:

**(1) Prevent and avoid damages**
- Take precautions and plan to minimize damages and impacts

(2) Resume operations quickly
- Take steps to resume operations as quickly as possible
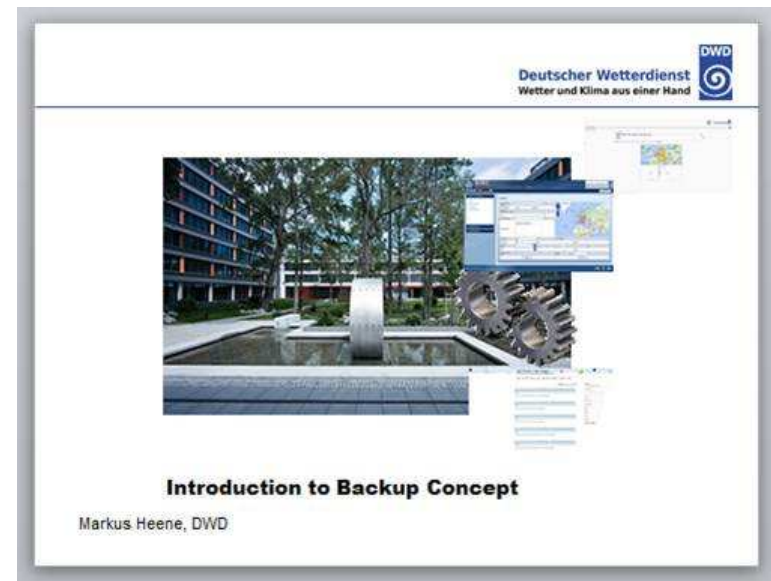


Concept of BCP

## Introduction to WIS backup concept

Why backup is necessary according to WIS Manual?

What backup services are available for NCs to continue their operations?

What preparations are necessary for NCs to use backup services?
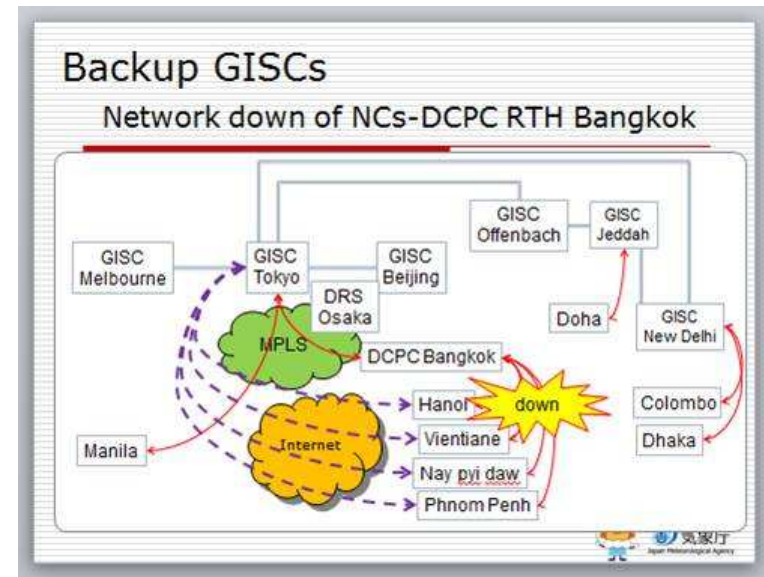
Detailed information >>

Introduction to Backup Concept

Markus Heene, DWD

>> Lesson 4 "Introduction GISC Backup" by Markus HEENE (DWD)

## Backup arrangements for GISC Tokyo's AMDCN

Introduction to backup arrangements to continue data exchange in case of network failure.

Detailed information >>



Backup GISCs
Network down of NCs-DCPC RTH Bangkok

>> Lesson 5 "Introduction to Backup"
by Yoritsugi OHNO (JMA)

# Training of data download from GISC Tokyo

NCs can download data from GISC Tokyo using *Subscription Manager* tool and shell scripts, through internet in preparation for the event of GTS failure.

Detailed information and practical trainings >>
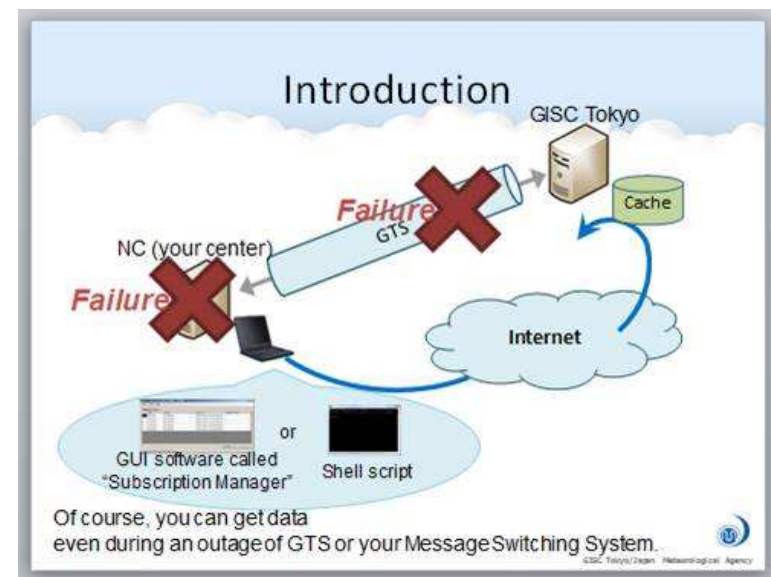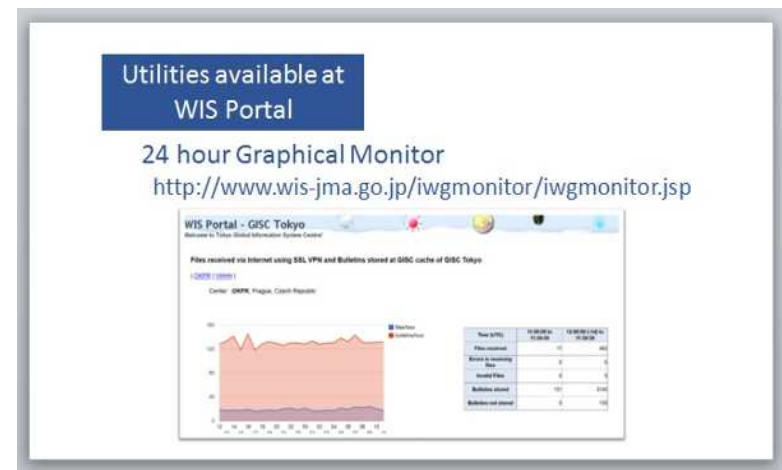


>> Lesson 6 "Training of data collection from GISC-Tokyo"
by Yasutaka HOKASE (JMA)

# Training of data upload to GISC Tokyo

NCs can also upload bulletins to GISC Tokyo using HTTPs tool, through internet in preparation for the event of GTS failure.

Detailed information and
practical trainings >>



>> Lesson 7 " Training of uploading data to GISC Tokyo"
by Hirofumi MIZUSHIMA (JMA)

## Mutual backup of GISCs Tokyo and Offenbach

GISC Offenbach and Tokyo are in collaboration with GISC backup arrangements. Each GISC collects/disseminates data from/to the other GISC's NCs in preparation for the event of GISC failure.

Detailed information and Live demonstration >>
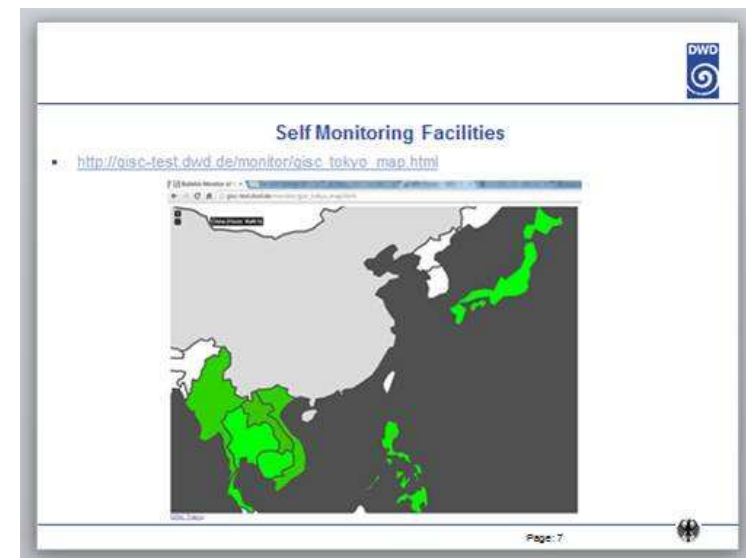


>> Lesson 8 "GISC Backup – Live demonstration" by Markus HEENE (DWD)

# Practical training of BCP in NCs

NCs are invited to draft a backup operation plan for reducing NC's own risk.

Detailed information and practical trainings >>



STEP 1 Make current network diagram
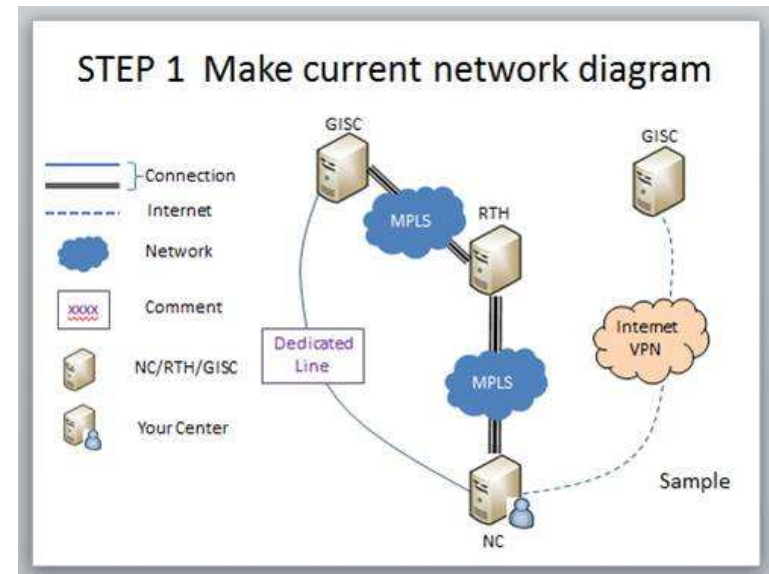
>> Lesson 9 "Practical Training of BCP"
by Kentaro TSUBOI & Kenji KOSUGE (JMA)

# WIS metadata management

# Metadata for DAR service

DAR service provides internet based flexible data Discovery, Access and Retrieval services.

Metadata consists of WIS data catalogue as the core element of DAR services, to make it easier to discover data and information.
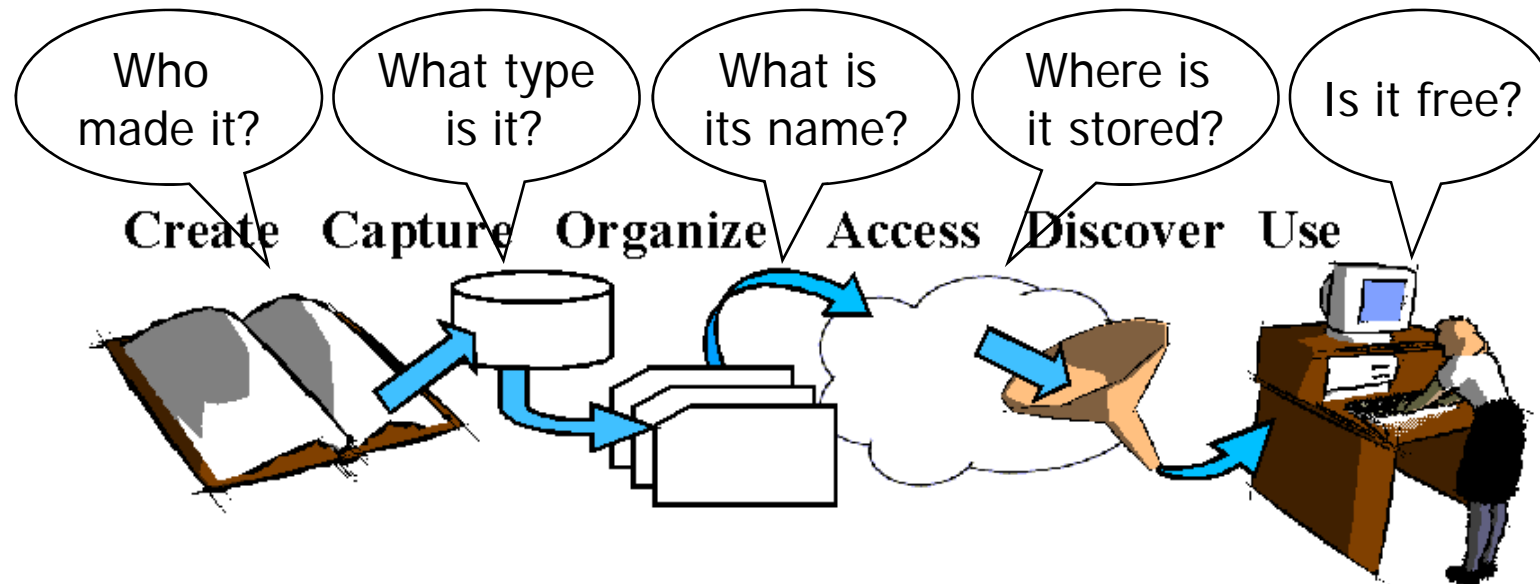
# Management of metadata

Metadata are created and maintained by data owners, and are managed by unique GISCs/DCPCs.

Detailed information >>

**Management of WIS Metadata**

TOYODA Eizi, JMA / Co-Chair IPET-MDRD

>> Lesson 10 "Management of Metadata" by Eizi TOYODA (JMA)

## Introduction to DCPC RTH Bangkok

TMD presents the status report of DCPC RTH Bangkok, including migration of metadata management.

Detailed information >>



>> Lesson 11 "Introduction to DCPC RTH Bangkok" by Wanchalearm PETSUWAN (TMD)

# WIS monitoring development

# Effectiveness of monitoring

In general, monitoring is an important method for checking service, measuring effectively and finding issues to improve in PDCA cycle.
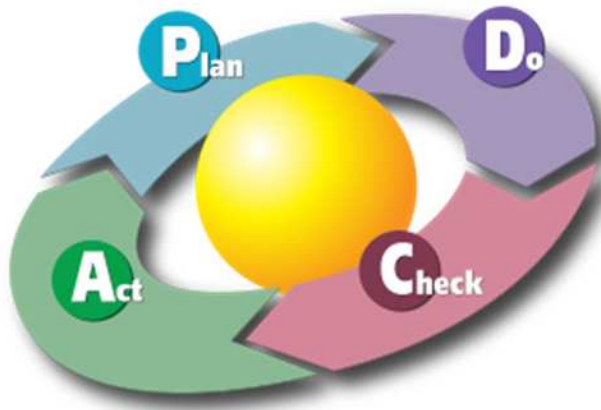


Diagram by Karn G. Bulsuk (http://www.bulsuk.com)

## PDCA cycle
The four phases in the Plan-Do-Check-Act Cycle involve:
- Plan: Identifying and analyzing the problem.
- Do: Developing and testing a potential solution.
- Check: Measuring how effective the test solution was, and analyzing whether it could be improved in anyway.
- Act: Implementing the improved solution fully.

## Introduction to WIS monitoring

WWW monitoring is conducted every quarter/year in order to asses quantity of data exchanged in GTS.

WIS Monitoring is aimed evaluating WIS performance.

Detailed information >>



>> Lesson 12 "WIS Monitoring"
by WANG Peng (CMA)

# Development of WIS monitoring

JMA's status of development of applications for WIS Monitoring pilot test.

Detailed information >>



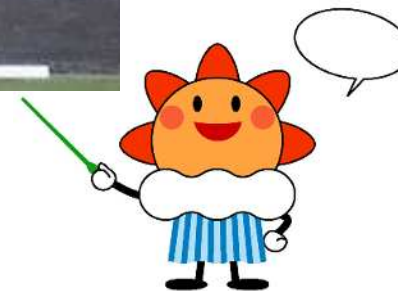Global view of dashboard (Mock-up) showing the status of several GISCs

>> Lesson 13 "Development of WIS monitoring" by Yasutaka HOKASE (JMA)

# WIS competency

# WIS competency

WIS competency framework is designed to present competencies, skills and knowledge necessary for personnel involved in the provision of WIS services:

Competencies
   Infrastructure
       1. Manage the physical infrastructure
       2. Manage the operational applications
   Data
       3. Manage the data flow
       4. Manage the data discovery
   External  interactions
       5. Manage WIS centre-centre interactions
       6. Manage user interactions
   Operational service
       7. Manage the quality, risk
        and operational service



World Meteorological Organization
Weather · Climate · Water

WIS Competences

Steve Foreman, WMO Secretariat
RA I WIS Implementation Planning Workshop

WMO; OBS/WIS — Weather·Climate·Water

>> Lesson 2 "WIS Competency"
by Steve FOREMAN (WMO secretariat)

# WIS competencies covered by each lesson

Each lesson covers part of WIS competencies.

Lessons
- Introduction to AMDCN
- Backup operation on WIS
- Backup operation on GISC-Tokyo's AMDCN
- Training of data collection/upload from/to GISC Tokyo
- Mutual backup of GISCs Tokyo and Offenbach
- Practical Training of BCP in NCs
- Metadata management
- Introduction/Development to WIS Monitoring

Competencies
Infrastructure
1. Manage the physical infrastructure
2. Manage the operational applications
Data
3. Manage the data flow
4. Manage the data discovery
External interactions
5. Manage WIS centre-centre interactions
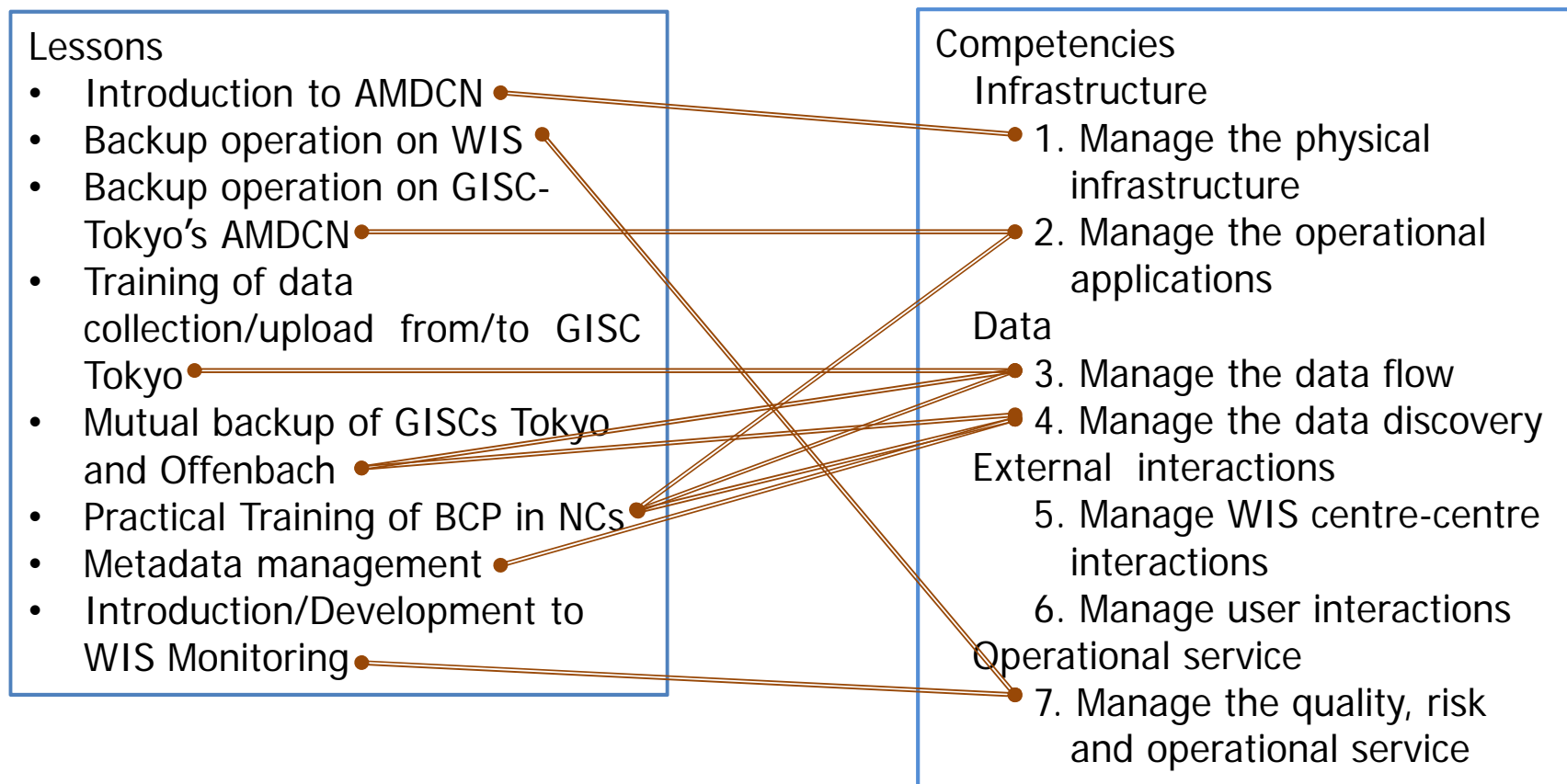6. Manage user interactions
Operational service
7. Manage the quality, risk and operational service

# Introduction to JMA's DCPCs

# DCPC RSMC Tokyo - Typhoon Center

Typhoon Center provides information on tropical cyclones in the western North Pacific and the South China Sea, including present and forecast positions as well as the movement and intensity of tropical cyclones.

Detailed information >>



TY Sanba
00 UTC, 14 September 2012
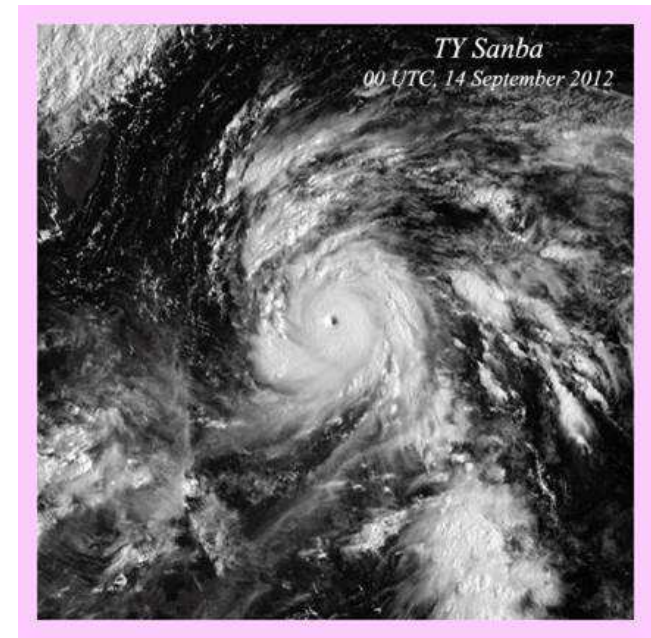
>> Lesson 14 "Products of the RSMC Tokyo - Typhoon Center" by Naoko KOMATSU (JMA)

## HIMAWARI-8/9

On 7 October 2014, JMA launched Himawari-8, its next-generation geostationary meteorological satellite, and plans to start its operation in 2015 as the replacement of MTSAT-2.

Himawari-9 will be launched in 2016 as backup and successor.

Detailed information >>



▲ひまわり8号・9号想像図　Images of Himawari-8/9

>> Lesson 15 "Himawari-8 data distribution/dissemination"
by Yukihiro KUMAGAI & Yasushi IZUMIKAWA (JMA)

## Technical site visit

● JMA Kiyose branch office (25km WWN, 45min.)
WIS, MSS (ADESS), super computer system for
NWP and Satellite Center (MSC)



>> 2nd day 4-6pm

● JMA Headquarters (2nd and 3rd floor)
Operation rooms for weather forecast, observation,
seismology and volcanology



>> 3rd day 2-3pm

## Key messages

WIS will become more stable, powerful and user-friendly system by collaborative development of NCs, DCPCs and GISCs.

Please give us feedback on any aspects of WIS services.

Your participation in pilot projects: PP-App, WIS monitoring PP and future PPs, is very much appreciated.

I hope that every lesson of this workshop will be of help for our collaborative development of WIS.

សូមអរគុណអ្នក    cảm ơn bạn

danke    তোমাকে ধন্যবাদ

�බොහෝම ස්තුතියි    salamat sa iyo

شكرا    ຂໍຂອບໃຈທ່ານ

Thank you    ขอขอบคุณ

ကျေးဇူးပဲ

Run
Run

Next Program
Coffee Break