



ADEOS-II Mission Operation

<GLI-250m Data Acquisition>

Satoko Horiyama MIURA

Earth Observation Systems Engineering Department (EOSD)

National Space Development Agency of Japan (NASDA)



1. ADEOS-II Mission Operation

1.1 Mode Definition

1.2 Data Downlink

2. GLI-250m Data Acquisition Analysis

2.1 Assumption

2.2 Analysis Case

2.3 Analysis Result : Case1

2.4 Analysis Result : Case2

2.5 Analysis Result : Case3

3. Conclusions

1. ADEOS-II Mission Operation



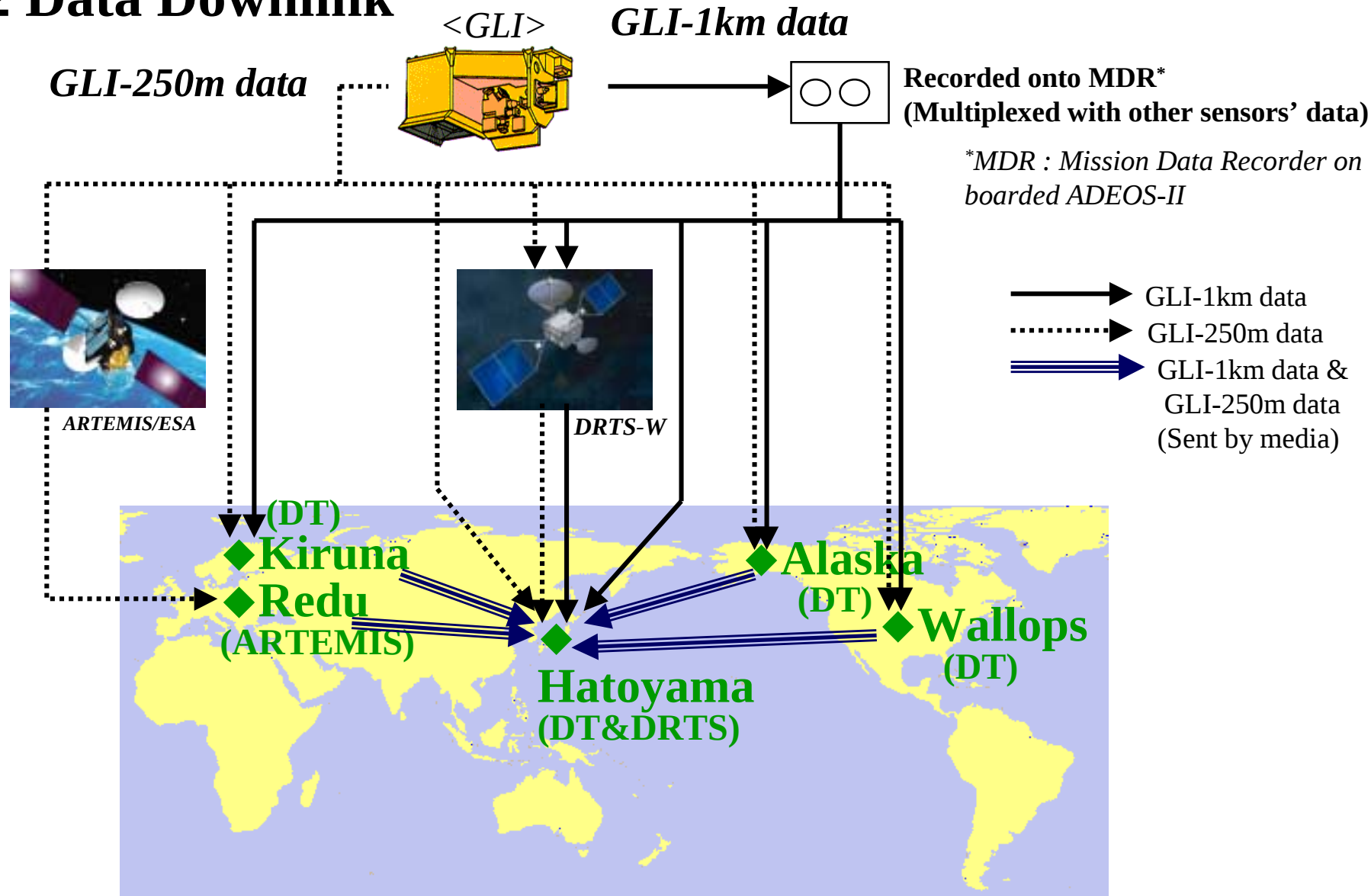
1.1 Mode Definition

- 1) Mode 1 : Operation with Data Relay Satellite (DRS)
 - Mission data is acquired via DRS and directly at four DT (Direct Transmission) ground stations.

- 2) Mode 2 : Operation without DRS
 - Mission data is acquired at four DT ground stations only.

1. ADEOS-II Mission Operation

1.2 Data Downlink



2. GLI-250m Data Acquisition Analysis

2.1 Assumption

- 1) Priority of Data Acquisition : MDR data (including GLI-1km data) downlink should be assigned at first. After that, GLI-250m data downlink should be assigned.
- 2) Analysis Period : 3 months
- 3) ARTEMIS is used only for GLI-250m data acquisition.
- 4) No other satellites using DRTS-W and ARTEMIS, i.e. ADEOS-II can use both of DRTS-W and ARTEMIS anywhere during available region. [During actual operation, conflict with other satellites will occur, and total of the acquired scenes will decrease]

2. GLI-250m Data Acquisition Analysis

2.1 Assumption

- 5) The period of using DRS : < 45 minutes/path. *[Same as actual operation]*
- 6) The period of direct transmission : < 30 minutes/path. *[Same as actual operation]*
- 7) No use of ODR (Optical Disk Recorder) . *[If ODR is used, the value of “6)” should be 10 minutes, instead of 30 minutes.]*
- 8) GLI-250m data is acquired as a unit of “scene” . One scene is a rectangle of about 1600km*1600km and equals about 4 minutes.
- 9) Land/daytime region should be acquired prior to ocean/nighttime region.

2. GLI-250m Data Acquisition Analysis



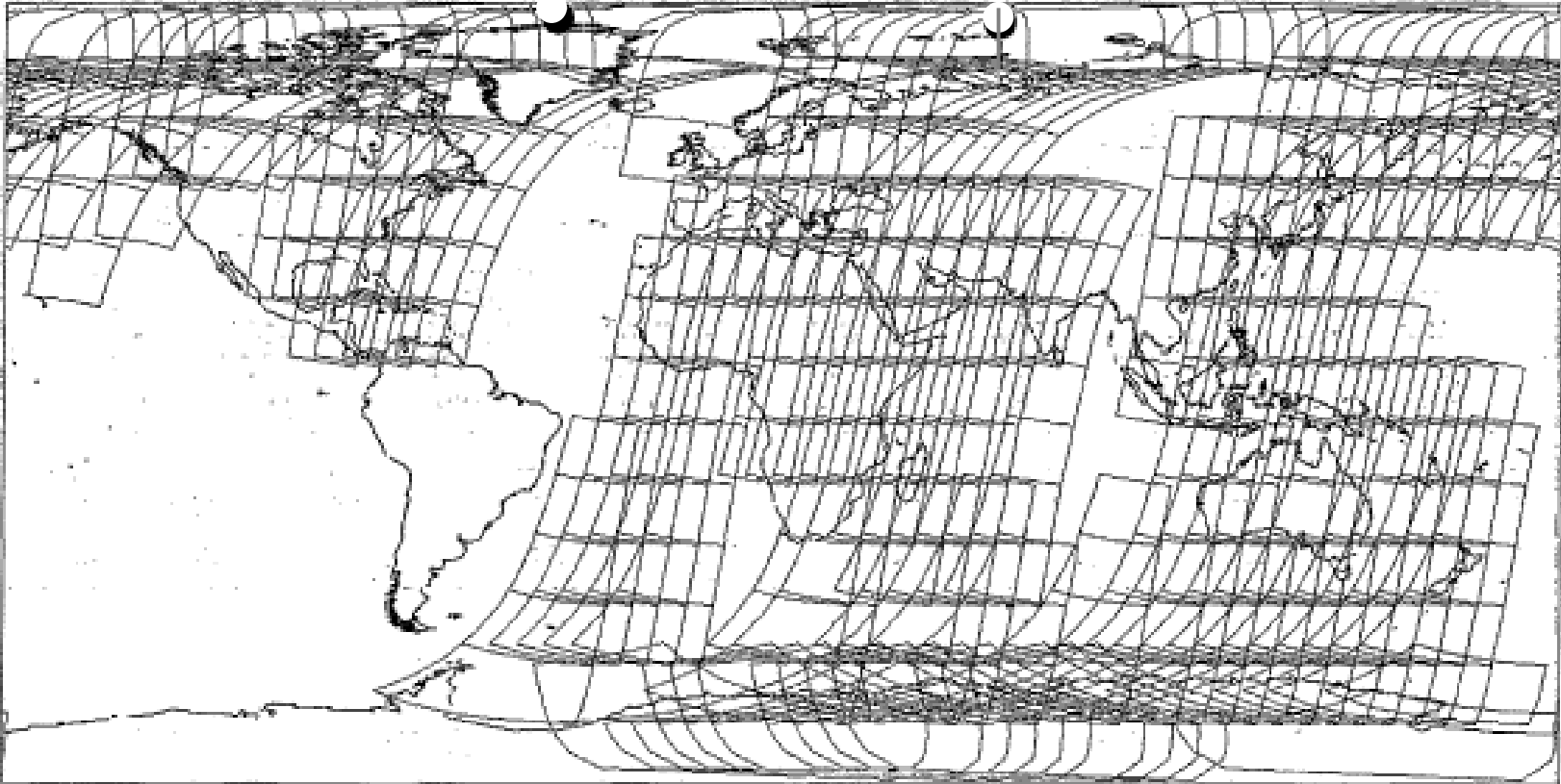
2.2 Analysis Case

1. Case 1 (Mode1)
 - DRTS-W and ARTEMIS are available
 - Four DT ground stations are available
2. Case 2 (Mode1)
 - DRTS-W is available
 - Four DT ground stations are available
3. Case 3 (Mode2)
 - Only four DT ground stations are available

2. GLI-250m Data Acquisition Analysis

2.3 Analysis Result :Case1

Coverage of Acquired GLI-250m data

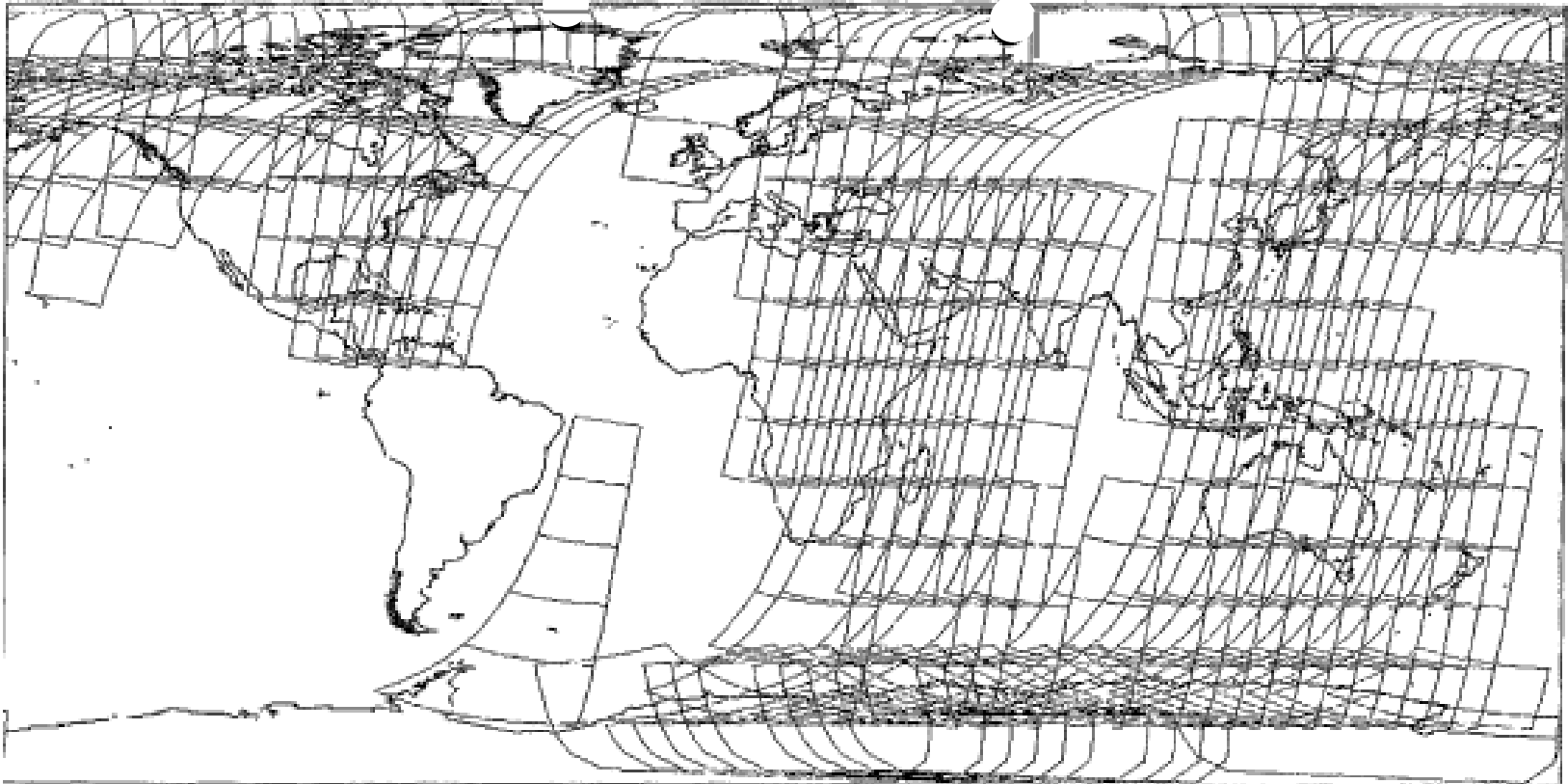


Total 1,811 scenes acquired per three months.

2. GLI-250m Data Acquisition Analysis

2.4 Analysis Result : Case2

Coverage of Acquired GLI-250m data

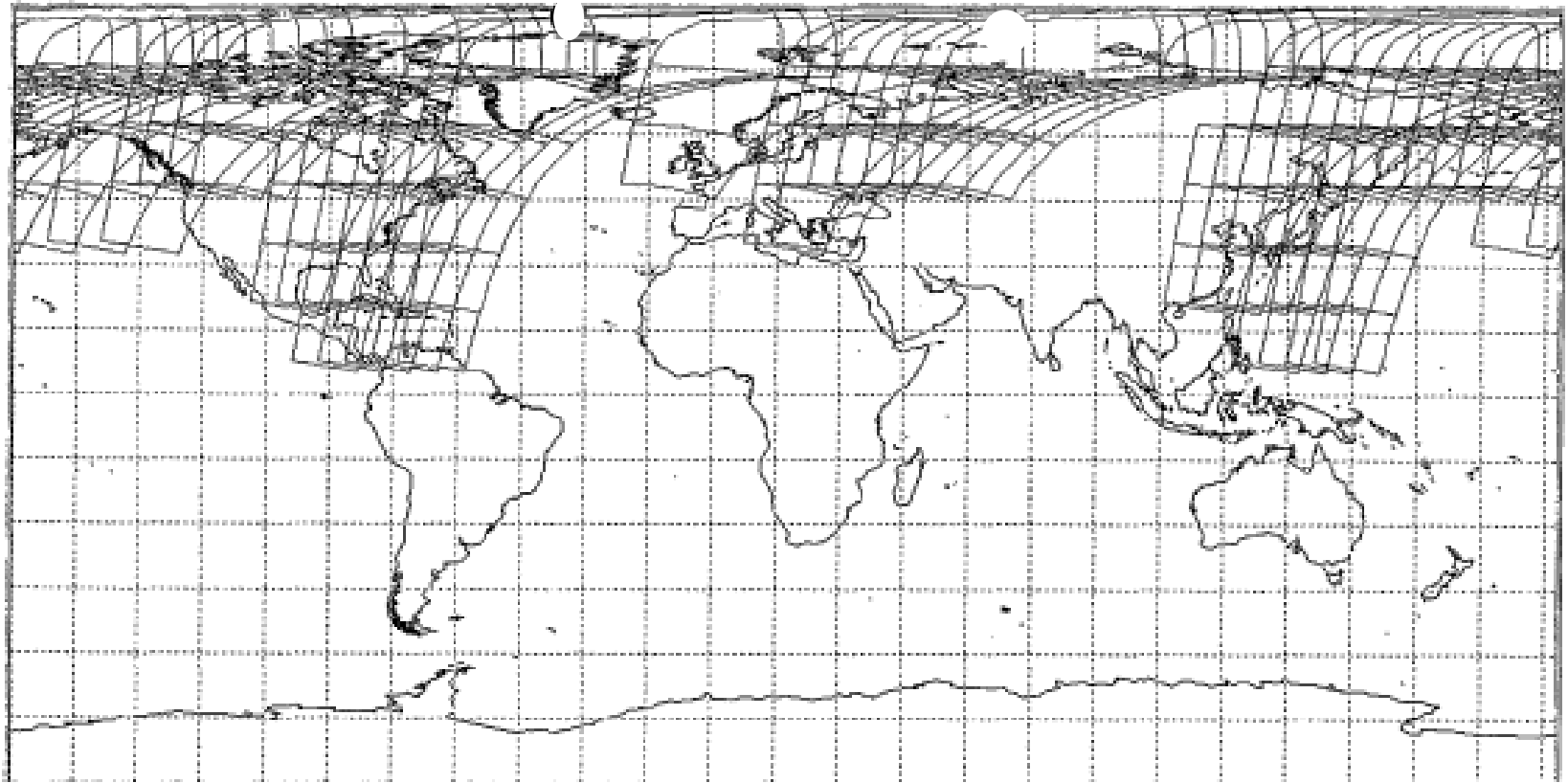


Total 1,787 scenes acquired per three months.

2. GLI-250m Data Acquisition Analysis

2.5 Analysis Result : Case3

Coverage of Acquired GLI-250m data



Total 971 scenes acquired per three months.

3. Conclusions



A) Coverage of Acquired Data

1) Without ARTEMIS

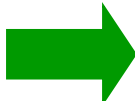
- Western Africa cannot be acquired.

2) Without DRS(DRTS-W and ARTEMIS)

- Almost no scene can be acquired in southern part of the world.

B) Total Scene Numbers

Assuming the result of Case 1 (=1,811 scenes) is 100%...

- 
- Case 2 : 98.6 %
 - Case 3 : 53.6%