To acquire more GLI-250m global data
< Technical Study >

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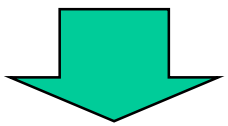
Contents

1. ADEOS-II Mission Operation

1.1 Operation Mode

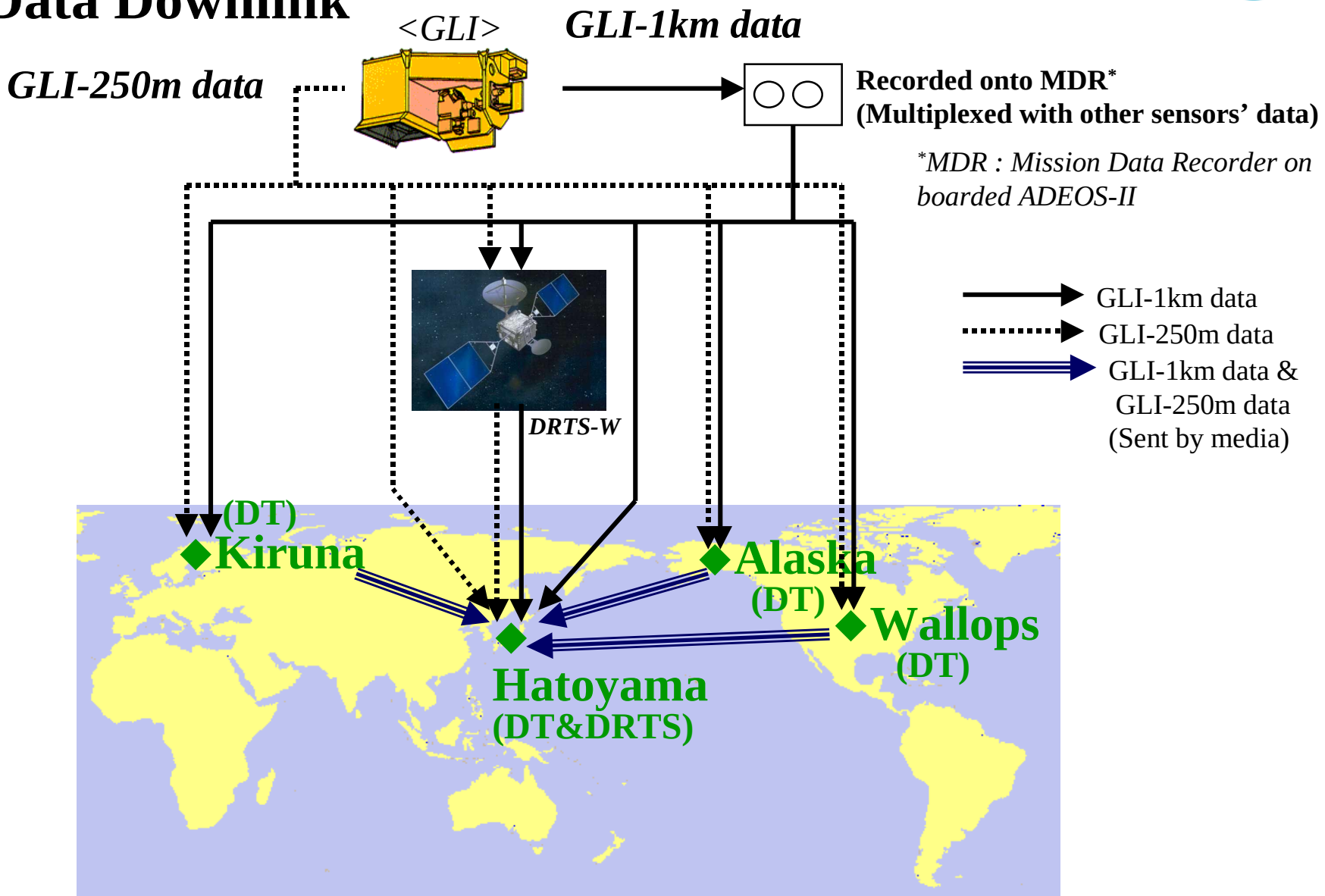
1) Mode 1 : Operation with DRTS-W
   - MDR data (including GLI-1km data) is acquired via DRTS-W basically.
   - DT stations is used for GLI-250m data downlink.
2) Mode 2 : Operation without DRTS-W
   - Both of MDR data and GLI-250m data is acquired at four DT ground stations only.



More GLI-250m data can be acquired during Mode 1.
But that is not enough for “Global GLI-250m data acquisition”.

1. ADEOS-II Mission Operation

1.2 Data Downlink



2. Typical Analysis of GLI-250m Data Acquisition

2.1 Condition for mission operation

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) The duration of using DRTS-W : < 45 minutes/path.

3) The duration of direct transmission (DT) : < **30 minutes/path** *(in case of "ODR off")*.

4) GLI-250m data is acquired as a unit of "scene" . One scene is a rectangle of about 1600km*1600km and equals about 4 minutes. To downlink 1 scene data, about 5 minutes pass will be needed (GLI-250m data + PN code).

2. Typical Analysis of GLI-250m Data Acquisition

2.2 Assumption for this study

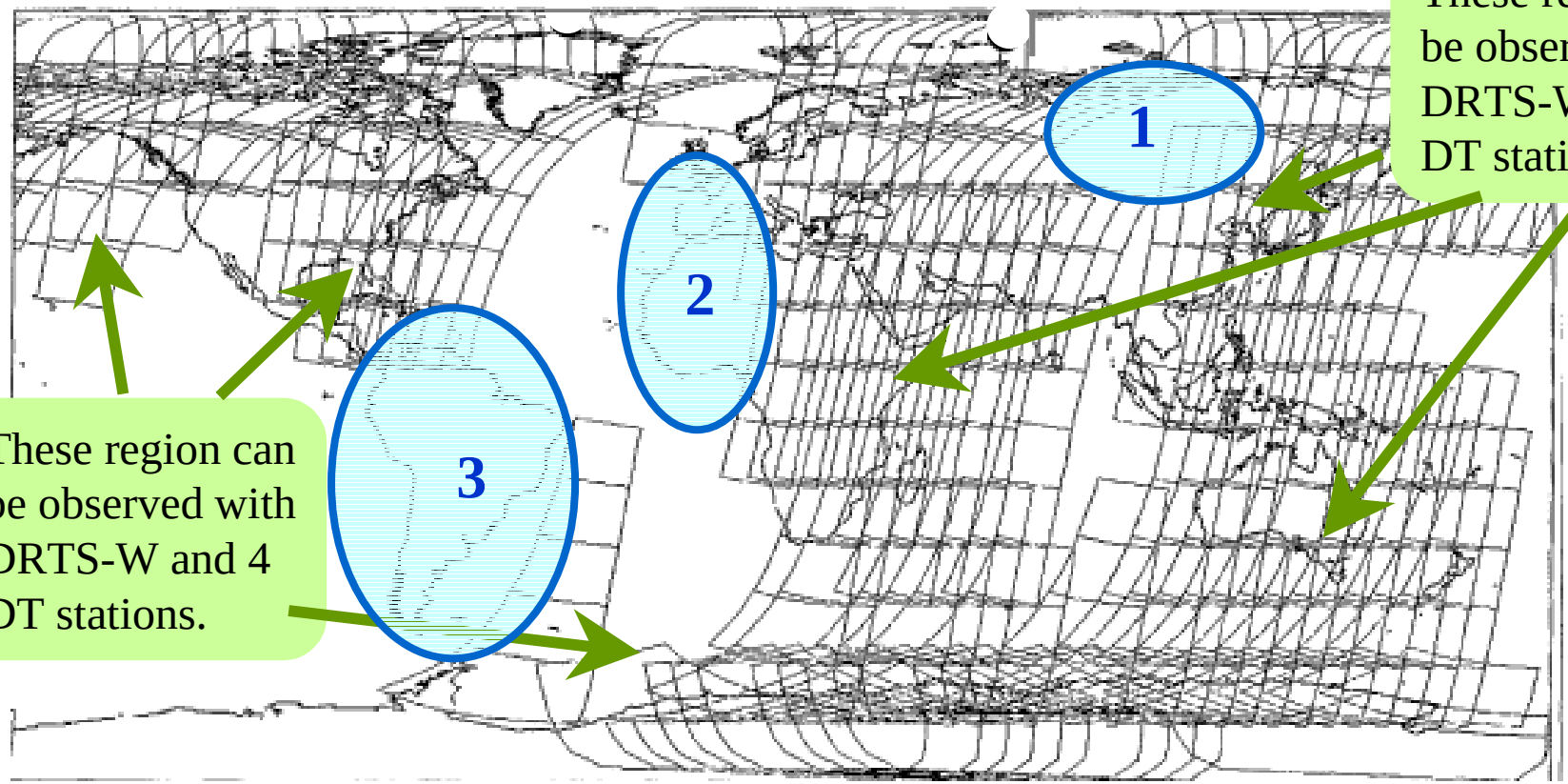
1) No use of ODR (Optical Disk Recorder) . ***[If ODR is used, DT transmission should be less than 10 minutes.]***

2) Observation request was generated by MMO, based on the idea “Land/daytime >> Ocean/nighttime”.

3) No collision on using DRTS-W. (ADEOS-II can use any part of DRTS-W available path).***[During actual operation, conflict with other satellites will occur, and total of the acquired scenes will decrease]***

2. Typical Analysis of GLI-250m Data Acquisition

2.3 Typical Coverage of GLI-250m observation (with DRTS -W, ASF, WFF, KRNS and EOC, for 3 months)

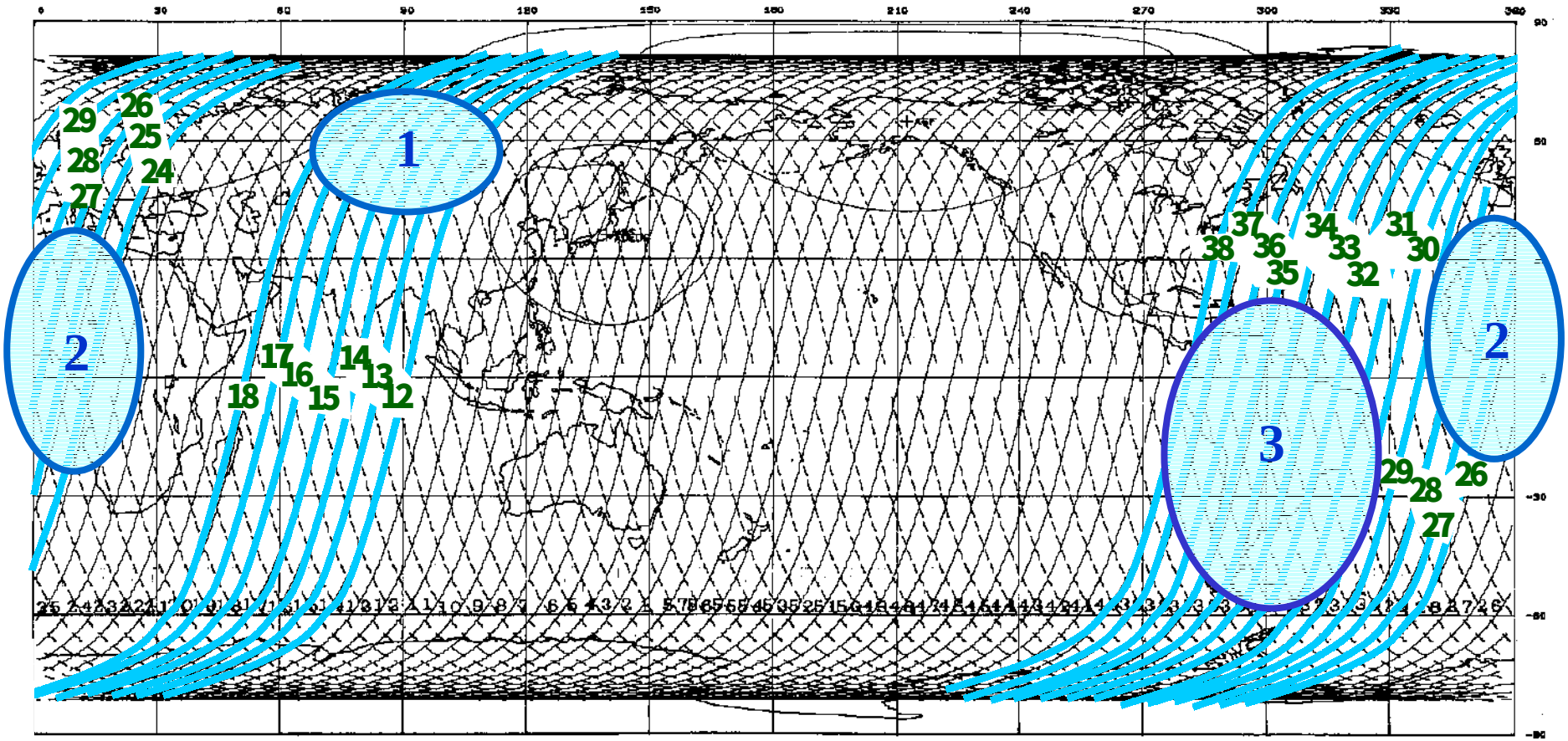


GLI-250m data acquisition is impossible even if we use DRTS-W and 4 DT stations (EOC, ASF, WFF, KRNS).

** ASF: Alaska, WFF:Wallops, KRNS : Kiruna*

3. To acquire more GLI-250m global data

3.1 Where should we add the ground station ??



Data reception at region 1 - 3 will be effective.

3. To acquire more GLI-250m global data

3.2 How about DT transmission remaining time ??

**DT Transmission is restricted less than 30 minutes / 1 orbit !!*

Typical 1 current example during **Mode 1**

Path No.	Remaining Time / 1 orbit (hh:mm:ss)	Path No.	Remaining Time / 1 orbit (hh:mm:ss)
1	0:25:46	30	0:19:01
2	0:20:22	**31**	**0:19:17**
3	0:11:49	**32**	**0:19:37**
4	0:19:31	**33**	**0:19:56**
5	0:24:11	**34**	**0:20:17**
6	0:19:14	**35**	**0:30:00**
7	0:23:01	**36**	**0:30:00**
8	0:30:00	**37**	**0:12:01**
9	0:23:06	**38**	**0:11:02**
10	0:23:43	39	0:18:49
11	0:24:15	40	0:18:43
12	**0:24:43**	41	0:19:18
13	**0:25:08**	42	0:20:23
14	**0:25:30**	43	0:16:34
15	**0:25:50**	44	0:24:35
16	**0:30:00**	45	0:24:55
17	**0:30:00**	46	0:30:00
18	**0:30:00**	47	0:18:02
19	0:24:57	48	0:16:59
20	0:30:00	49	0:20:10
21	0:30:00	50	0:19:28
22	0:30:00	51	0:18:59
23	0:23:22	52	0:18:42
24	**0:23:05**	53	0:18:36
25	**0:18:56**	54	0:18:39
26	**0:18:38**	55	0:18:47
27	**0:18:34**	56	0:19:03
28	**0:18:38**	57	0:30:00
29	0:18:47		

☺Region 1 : Path 12-18
☺Region 2 : Path 24 - 28
☺Region 3 : Path 31 - 38

Adding observation is available.

3. To acquire more GLI-250m global data

3.5 Data reception at Region 1

To acquire “Region 1 data”, we need another ground station.

3. To acquire more GLI-250m global data

3.4 Data reception at Region 2

Fucino Station for ERS data reception is located in Italy.

If we use this station for GLI-250m data acquisition ….

During path 22 - 32, about 11 scenes will be acquired.

3. To acquire more GLI-250m global data

3.3 Data reception at Region 3

Cuiaba Station for ERS data reception is located in Brazil.

If we use this station for GLI-250m data acquisition …

During path 33 - 38, about 11 scenes will be acquired.