GOES-East Optimized Schedules

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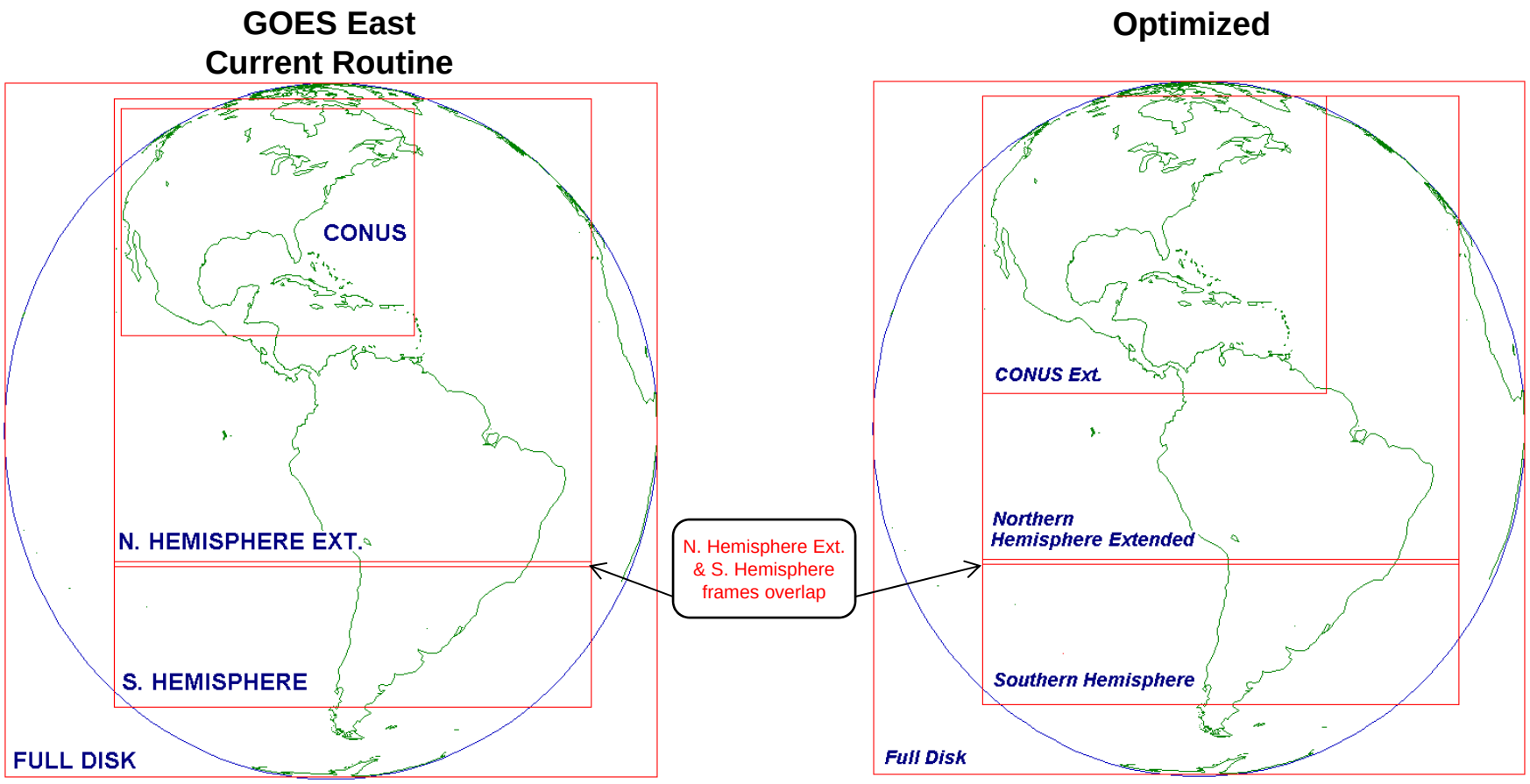
Purpose

- To utilize small schedule idle times that were required on previous satellites (GOES I-M) for INR (image navigation & registration) commanding.
- To better align command timing between Routine (ERTN), Rapid Scan (ERAP), Super Rapid Scan (ESRSO) and Full Disk (EFD) schedules.
- To schedule star navigation windows for the same time in all GOES East Schedules.

Benefits to Users

- Routine Schedule
  - The freed time will enable more coverage in areas, such as Canada, The Caribbean Sea, Central America and South America.
  - For example, a tropical cyclone in the Eastern and Southern Caribbean Sea will now be imaged twice as often - every 15 minutes instead of every half hour.
- Rapid Schedule
  - Additional coverage of Eastern Caribbean sector
- Super Rapid Schedule
  - Gain 1 additional image per ½ hour.
  - Images are spread out more in time, giving better chance of more images in the time period of interest.
- Full Disk Schedule
  - Restores southern edge of Full Disk imagery.

GOES-East Routine Frame Changes



The CONUS image in the Current Routine is replaced by the CONUS Ext. image in the Optimized Routine. This will gain beneficial coverage over more of Canada, the Caribbean Sea, East Caribbean Islands, Nicaragua, Costa Rica, Panama, Columbia, Venezuela, and Guyana. (No other frames change). Frame-dependent processing will need adjustment.

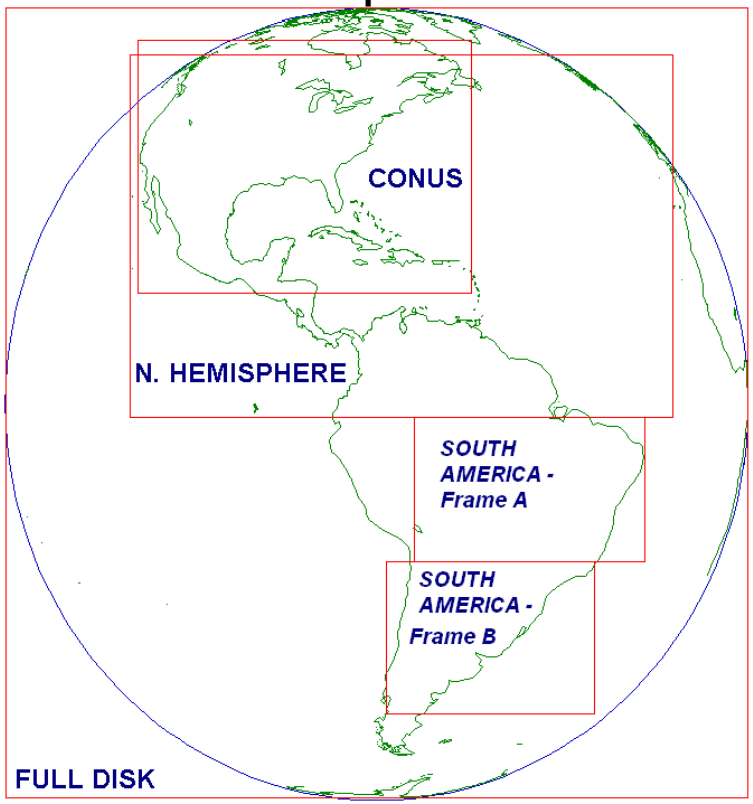
GOES-East Routine Schedule Timing Changes

Current Routine			Optimized Routine		
01:01:30	CONTINENTAL US (CONUS)	04:43	01:00:00	CONTINENTAL US (CONUS) EXT.	06:59
01:09:10	SOUTHERN HEMISPHERE	04:49	01:07:15	SOUTHERN HEMISPHERE	04:49
01:15:00	NORTHERN HEMISPHERE EXT.	14:15	01:15:00	NORTHERN HEMISPHERE EXT.	14:15
01:31:30	CONTINENTAL US (CONUS)	04:43	01:30:00	CONTINENTAL US (CONUS) EXT.	06:59
01:39:10	SOUTHERN HEMISPHERE	04:49	01:37:15	SOUTHERN HEMISPHERE	04:49
01:45:00	NORTHERN HEMISPHERE EXT.	14:15	01:45:00	NORTHERN HEMISPHERE EXT.	14:15
02:01:30	CONTINENTAL US (CONUS)	04:43	02:00:00	CONTINENTAL US (CONUS) EXT.	06:59
02:09:10	SOUTHERN HEMISPHERE	04:49	02:07:15	SOUTHERN HEMISPHERE	04:49
02:15:00	NORTHERN HEMISPHERE EXT.	14:15	02:15:00	NORTHERN HEMISPHERE EXT.	14:15
02:31:30	CONTINENTAL US (CONUS)	04:43	02:30:00	CONTINENTAL US (CONUS) EXT.	06:59
02:39:10	SOUTHERN HEMISPHERE	04:49	02:37:15	SOUTHERN HEMISPHERE	04:49
02:45:00	FULL DISK	26:06	02:45:00	FULL DISK	26:06
03:15:00	NORTHERN HEMISPHERE EXT.	14:15	03:15:00	NORTHERN HEMISPHERE EXT.	14:15
03:31:30	CONTINENTAL US (CONUS)	04:43	03:30:00	CONTINENTAL US (CONUS) EXT.	06:59
03:39:10	SOUTHERN HEMISPHERE	04:49	03:37:15	SOUTHERN HEMISPHERE	04:49
03:45:00	NORTHERN HEMISPHERE EXT.	14:15	03:45:00	NORTHERN HEMISPHERE EXT.	14:15

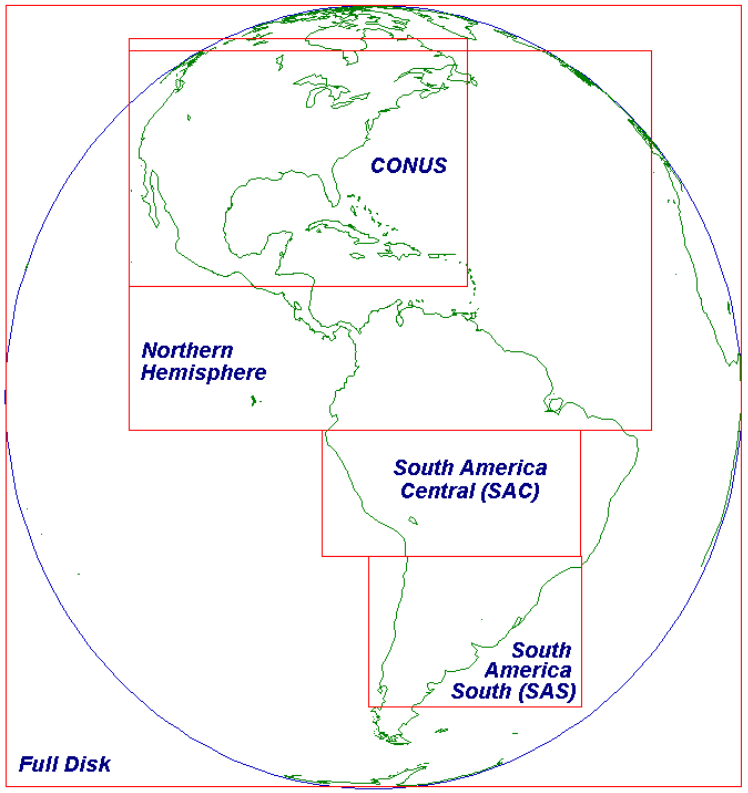
NOTE – Images will now be provided at new times in the schedule and there will be different lengths of time between images. The times are commanded times, and there could be up to a 20 second delay for processors to see the start of image. Any time-dependent processing should be modified to match the new image time stamps.

GOES-East Rapid Frame Changes

GOES East Current Rapid Scan



Optimized



Primary changes are with South America Frames, but all image frames in the Rapid Schedule have been modified, some more than others.

Going from Routine to Rapid scan will generate less coverage of the Eastern Caribbean Sea because although the Routine schedule has the new CONUS Extended, the Rapid schedule has the smaller CONUS frame. NESDIS is looking at Eastern Caribbean frame options in the Rapid schedule to address this coverage.

Also, the South America frames have been adjusted per WMO request.

GOES-East Rapid Schedule Timing Changes

Current Rapid			Optimized Rapid		
00:59:50	SOUTH AMERICA - IMAGE A	02:02	01:00:00	CONTINENTAL US (CONUS)	04:37
01:02:05	CONTINENTAL US (CONUS)	04:43	01:04:50	SOUTH AMERICA CENTRAL (SAC)	02:01
01:10:00	CONTINENTAL US (CONUS)	04:43	01:07:05	CONTINENTAL US (CONUS)	04:37
01:15:00	NORTHERN HEMISPHERE	09:44	01:15:00	NORTHERN HEMISPHERE	09:55
01:25:00	CONTINENTAL US (CONUS)	04:43	01:25:09	CONTINENTAL US (CONUS)	04:37
01:29:50	SOUTH AMERICA - IMAGE B	02:02	01:30:00	CONTINENTAL US (CONUS)	04:37
01:32:05	CONTINENTAL US (CONUS)	04:43	01:34:50	SOUTH AMERICA SOUTH (SAS)	02:05
01:40:00	CONTINENTAL US (CONUS)	04:43	01:37:05	CONTINENTAL US (CONUS)	04:37
01:45:00	NORTHERN HEMISPHERE	09:44	01:45:00	NORTHERN HEMISPHERE	09:55
01:55:00	CONTINENTAL US (CONUS)	04:43	01:55:09	CONTINENTAL US (CONUS)	04:37
01:59:50	SOUTH AMERICA - IMAGE A	02:02	02:00:00	CONTINENTAL US (CONUS)	04:37
02:02:05	CONTINENTAL US (CONUS)	04:43	02:04:50	SOUTH AMERICA CENTRAL (SAC)	02:01
02:10:00	CONTINENTAL US (CONUS)	04:43	02:07:05	CONTINENTAL US (CONUS)	04:37
02:15:00	NORTHERN HEMISPHERE	09:44	02:15:00	NORTHERN HEMISPHERE	09:55
02:25:00	CONTINENTAL US (CONUS)	04:43	02:25:09	CONTINENTAL US (CONUS)	04:37
02:29:50	SOUTH AMERICA - IMAGE B	02:02	02:30:00	CONTINENTAL US (CONUS)	04:37
02:32:05	CONTINENTAL US (CONUS)	04:43	02:34:50	SOUTH AMERICA SOUTH (SAS)	02:05
02:40:00	CONTINENTAL US (CONUS)	04:43	02:37:05	CONTINENTAL US (CONUS)	04:37
02:45:00	FULL DISK	26:06	02:45:00	FULL DISK	26:06
03:15:00	NORTHERN HEMISPHERE	09:44	03:15:00	NORTHERN HEMISPHERE	09:55
03:25:00	CONTINENTAL US (CONUS)	04:43	03:25:09	CONTINENTAL US (CONUS)	04:37
03:29:50	SOUTH AMERICA - IMAGE B	02:02	03:30:00	CONTINENTAL US (CONUS)	04:37
03:32:05	CONTINENTAL US (CONUS)	04:43	03:34:50	SOUTH AMERICA SOUTH (SAS)	02:05
03:40:00	CONTINENTAL US (CONUS)	04:43	03:37:05	CONTINENTAL US (CONUS)	04:37
03:45:00	NORTHERN HEMISPHERE	09:44	03:45:00	NORTHERN HEMISPHERE	09:55
03:55:00	CONTINENTAL US (CONUS)	04:43	03:55:09	CONTINENTAL US (CONUS)	04:37

NOTE – Images will now be provided at new times in the schedule and there will be different lengths of time between images. The times are commanded times, and there could be up to a 20 second delay for processors to see the start of image. Any time-dependent processing should be modified to match the new image time stamps.

GOES-East Super Rapid Schedule Timing Changes

Current Super Rapid			Optimized Super Rapid		
00:59:05	CONTINENTAL US (CONUS)	04:43	01:00:00	CONTINENTAL US (CONUS)	04:37
01:04:00	SRSO (8)	08:00	01:04:50	SRSO (6)	06:00
01:15:00	NORTHERN HEMISPHERE	09:44	01:15:00	NORTHERN HEMISPHERE	09:55
01:25:00	SRSO (1)	01:00	01:25:09	SRSO (4)	04:00
01:30:00	CONTINENTAL US (CONUS)	04:43	01:30:00	CONTINENTAL US (CONUS)	04:37
01:35:00	SRSO (8)	08:00	01:34:50	SRSO (6)	06:00
01:45:00	NORTHERN HEMISPHERE	09:44	01:45:00	NORTHERN HEMISPHERE	09:55
01:55:00	SRSO (1)	01:00	01:55:09	SRSO (4)	04:00
01:59:05	CONTINENTAL US (CONUS)	04:43	02:00:00	CONTINENTAL US (CONUS)	04:37
02:04:00	SRSO (8)	08:00	02:04:50	SRSO (6)	06:00
02:15:00	NORTHERN HEMISPHERE	09:44	02:15:00	NORTHERN HEMISPHERE	09:55
02:25:00	SRSO (1)	01:00	02:25:09	SRSO (4)	04:00
02:30:00	CONTINENTAL US (CONUS)	04:43	02:30:00	CONTINENTAL US (CONUS)	04:37
02:35:00	SRSO (8)	08:00	02:34:50	SRSO (6)	06:00
02:45:00	FULL DISK	26:06	02:45:00	FULL DISK	26:06
03:15:00	NORTHERN HEMISPHERE	09:44	03:15:00	NORTHERN HEMISPHERE	09:55
03:25:00	SRSO (1)	01:00	03:25:09	SRSO (4)	04:00
03:30:00	CONTINENTAL US (CONUS)	04:43	03:30:00	CONTINENTAL US (CONUS)	04:37
03:35:00	SRSO (8)	08:00	03:34:50	SRSO (6)	06:00
03:45:00	NORTHERN HEMISPHERE	09:44	03:45:00	NORTHERN HEMISPHERE	09:55
03:55:00	SRSO (1)	01:00	03:55:09	SRSO (4)	04:00

(#) – This is the number of images taken during SRSO. Depends upon time available in schedule around various health and safety demands including scheduled star-look windows.

Benefits of Optimized Super Rapid Schedule

1. Gain 1 additional image per ½ hour.
2. Images are spread out more in time, giving better chance of more images in the time period of interest.

NOTE – Images will now be provided at new times in the schedule and there will be different lengths of time between images. The times are commanded times, and there could be up to a 20 second delay for processors to see the start of image. Any time-dependent processing should be modified to match the new image time stamps.

GOES-East Full Disk Schedule Timing Changes

Current Full Disk			Optimized Full Disk		
01:15:00	FULL DISK ABBREVIATED	24:02	01:15:00	FULL DISK	26:06
01:45:00	FULL DISK	26:06	01:45:00	FULL DISK	26:06
02:15:00	FULL DISK ABBREVIATED	24:02	02:15:00	FULL DISK	26:06
02:45:00	FULL DISK	26:06	02:45:00	FULL DISK	26:06
03:15:00	FULL DISK ABBREVIATED	24:02	03:15:00	FULL DISK	26:06
03:45:00	FULL DISK	26:06	03:45:00	FULL DISK	26:06

*ABBREVIATED – Southern Edge of frame is cut off.

Optimized Schedule recovers the southern edge of all full disk images.

NOTE – There will be different lengths of time between images. Any time-dependent processing should be modified to match the new image time stamps.

Testing

• Testing was coordinated with Products and User Services, and analysis was conducted with good results.

• GOES-14 Testing: In August, 2013 when GOES-14 was out of storage, all four schedules (ERTN, ERAP, ESRSO and Full Disk) were tested. Adjustments were made to ensure the sequences ran without error, and retested successfully.

• GOES-13 Testing: The Products and User Services groups would like to perform two additional tests prior to transitioning to the Optimized Schedules. The tests would allow all systems to be tested operationally, as well as allow Users to see examples of the new products. Proposed test dates are as follows:

- Feb 11, 1600-1900 UTC replace routine imaging with Optimized routine imaging.
- Feb 13, 1600-1900 UTC replace routine imaging with Optimized Rapid imaging.

• If all tests are successful, the new schedules and frames are tentatively scheduled to be available for promotion to operations in April, 2014.

Questions / Comments: SPSD.UserServices@noaa.gov