

# COORDINATION GROUP ON SATELLITE DATA REQUIREMENTS FOR RA III AND RA IV

## 3<sup>rd</sup> Teleconference

11 December 2013, 15.00 UTC

### Summary

#### Participants:

Estela Collini, SNM, Argentina ([estela.collini@gmail.com](mailto:estela.collini@gmail.com))  
Luiz Machado, INPE, Brazil ([luiz.machado@cptec.inpe.br](mailto:luiz.machado@cptec.inpe.br))  
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Stephan Bojinski, WMO ([sbojinski@wmo.int](mailto:sbojinski@wmo.int))

Item 0 (review of Actions) added to the agenda (Annex I), which otherwise participants accepted.

#### 0. Review of Actions

**Action 2.1:** NOAA, INPE, EUMETSAT and potentially other data providers to complement the initial user requirements list with matching information on satellite products and data distribution mechanisms. For this purpose, the Excel sheet depicted in Annex II will be made available by email and on <http://satellite.cptec.inpe.br/geonetcast/es/datareq.html>). Deadline: 9 December 2013.

**Open. Outstanding on the part of EUM, NOAA, INPE. WMO Sec to distribute updated spreadsheet; all providers to complete exercise by 21 Jan 2014.**

**Action 2.2:** EUMETSAT to send to the Group the EUMETCast-Americas products catalogue.  
**Done (15 Nov 2013).**

**Action 2.3:** INPE to update RA-3-4-SDR website with 1<sup>st</sup> teleconference report, and updated RA-3-4-Requirements Table as depicted in Annex II.

**Done. Post also 2<sup>nd</sup> and 3<sup>rd</sup> (this) report.**

**Action 2.4:** Group to review updated questionnaire given in Annex III, and provide feedback to S. Bojinski by 18 November 2013.

**Done. Translations into Spanish and Portuguese available.**

**Action 2.4(b):** P. Seymour agreed to investigate whether a simple tool was available to the Group for developing options for size and location of scan frames.

**Done, superseded.**

**Action 2.5:** P. Seymour to inform the Group by what deadline a prioritized scan schedule for South America should be available.

**Done. No fixed deadline but end of 2013 desirable.**

## 1. Regional Questionnaire: Survey Timeline; Areas of Responsibility

The survey is intended to provide a comprehensive picture of satellite data user needs in the Americas. It builds on the 2012 WMO Survey especially in areas with low response rate. The questionnaire is available in English, Spanish and Portuguese (see Annex II). The Group should use the points of contact identified in the WMO Survey when distributing the questionnaire.

Participants agreed on the following areas of responsibility:

Focal Point	Countries to distribute the questionnaire	Comments
E. Collini (Argentina)	Argentina, Uruguay, Bolivia, Paraguay, Chile	To send results to L. Machado, D. Sousa
L. Machado, D. Sousa (Brazil)	Brazil, Peru, Venezuela, Ecuador	To collate results for S America
D. Bradley (Canada)	Canada	To collate results for Canada
O. Gonzalez / P. Barbosa (Colombia)	Colombia, Guyana, Surinam	To send results to L. Machado, D. Sousa
RA III Members:	<a href="http://www.wmo.int/pages/members/region4_en.html">http://www.wmo.int/pages/members/region4_en.html</a> (27 states and territories)	
RA IV Members:	<a href="http://www.wmo.int/pages/members/region3_en.html">http://www.wmo.int/pages/members/region3_en.html</a> (13 states and territories)	

**Action 3.1: WMO Secretariat to contact Bryan Thomas and Kathy-Ann Caesar regarding their possible role as Central America/Caribbean focal point for the RA-3-4-SDR Group survey (cc L. Machado, E. Collini, O. Gonzalez / P. Barbosa, D. Bradley).**

### Timeline:

Letter by WMO Space Programme in support of Survey (English, Spanish):	by 15 Jan 2014
Distribution of questionnaire by Focal Points to countries:	by 31 Jan 2014
Deadline for users to provide responses:	by 1 Mar 2014
Integration, analysis, reporting:	by 31 Mar 2014

L. Machado, D. Sousa committed to integrate and analyze the survey results for South America. S. Kaya agreed to collate feedback from users in Canada, and provide this information to the overall survey report.

The Group recognized that a focal point for distributing the questionnaire, and for collating the results was required for Central America and the Caribbean.

**Action 3.2: WMO Secretariat to send to Luiz Machado, Estela Collini, O. Gonzalez / P. Barbosa, and David Bradley the email addresses of respondents to the WMO 2012 Survey, such that these can be considered in this survey.**

## 2. Options for GOES-13 Scanning

Four Group members provided responses to a WMO secretariat note outlining four options (Annex III). B. Thomas (Trinidad and Tobago) and E. Collini (Argentina) favoured Option C, since all volcanoes in the Andean Cordillera would be covered to support Buenos Aires Volcanic Ash Advisory Centre services. INPE Brazil and Colombia indicated their preference for Option D, noting that Eastern Brazil would have 15-minute coverage by the Meteosat imagers, that the southernmost area of South America were frequently covered by polar-orbiting satellites, and that this option would be a good compromise for the Continent. E. Collini remarked that Argentina currently had no operational polar orbiter receiving capacity, with plans underway.

The Group recommended that Option D should be considered as the consensus option for additional scans by the GOES-13 imager during Rapid Scan Operations. Final endorsement of this recommendation should be made at the next teleconference.

**3. Next meeting**

21 January 2014 at 15.00 UTC.

**4. AOB**

NOAA provided information on the implications for reception systems when transitioning to GOES-R to IDEAM.

The meeting closed at 16:00 UTC.

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## **ANNEX I: AGENDA**

0. Review of Actions
1. Regional Questionnaire: Survey Timeline; Areas of Responsibility
2. Options for GOES-13 Scanning
3. Next meeting
4. AOB

## ANNEX II

### SATELLITE USER SURVEY

On behalf of the Coordination Group on Satellite Data Requirements in Region III and  
Region IV  
Of the World Meteorological Organization

1) **Country and name of your organization:**

2) **Type of your organization**

- National meteorological/hydrological service
- Other operational governmental agency
- Regional/international organization
- Research/academic institution
- Other

3) **A) You are currently using data from which satellites:**

- GOES-E     GOES-W     Meteosat-10
- METOP     CBERS     POES     Aqua/Terra     DMSP
- Cloudsat/Calipso     FY-3     METEOR-M     NPP
- SPOT     Oceansat     GOSAT     Landsat     Aquarius/SAC-D
- SMOS     SAR missions (Radarsat-2, TerraSAR-X, Cosmo-Skymed, TanDEM-X)
- Jason     TRMM     Megha-Tropiques     HY     COSMIC     Other

**B) You are planning to use data from which satellites:**

- GOES-R
- JPSS     METOP     Sentinel-3     Sentinel-1     Sentinel-2
- FY-3     Landsat     GCOM-W     SMAP     ADM-Aeolus     GPM
- Jason-CS     Other

4) **What is your main use of satellite data?**

Weather forecasts and warnings	<input type="checkbox"/>
Climate predictions and assessments	<input type="checkbox"/>
Hydrological forecasts, warnings and assessments	<input type="checkbox"/>
Oceanography and marine meteorology	<input type="checkbox"/>
Space weather applications	<input type="checkbox"/>
Disaster mitigation and preparedness	<input type="checkbox"/>
Land monitoring (e.g., for agriculture)	<input type="checkbox"/>
Environmental assessments	<input type="checkbox"/>
Socio-economic mapping	<input type="checkbox"/>
Research and development	<input type="checkbox"/>
Education and training	<input type="checkbox"/>
Other (please specify)	<input type="checkbox"/>

5) **Data timeliness: are you mostly using**

Near-real time data (timeliness 0-48 hours)

Historical data

Both are equally important to me

- 6) **A) How do you currently receive and access satellite data? Give details on the reception system (e.g., antenna) as appropriate.**

System		Details
Direct readout (e.g., HRPT)	<input type="checkbox"/>	
GTS point-to-point	<input type="checkbox"/>	
Internet (ftp, http)	<input type="checkbox"/>	
DVB-S/S2: GEONETCast-Americas	<input type="checkbox"/>	
DVB-S/S2: EUMETCast-Americas	<input type="checkbox"/>	
Other	<input type="checkbox"/>	

- B) How would you like to receive satellite data in the future?**

System		Details
Direct readout (e.g., HRPT)	<input type="checkbox"/>	
GTS point-to-point	<input type="checkbox"/>	
Internet (ftp, http)	<input type="checkbox"/>	
DVB-S/S2: GEONETCast-Americas	<input type="checkbox"/>	
DVB-S/S2: EUMETCast-Americas	<input type="checkbox"/>	
Other	<input type="checkbox"/>	

- 7) **Do you intend to buy direct readout stations for the next satellite generation?**

Yes	<input type="checkbox"/>
No	<input type="checkbox"/>
Comments	

- 8) **Are you aware of GEONETCast/EUMETCast?**

Yes	<input type="checkbox"/>
No	<input type="checkbox"/>
Comments	

- 9) **An initial set of satellite data requirements for RA III and RA IV has been developed; please comment, and add your requirements as necessary:**

<http://satellite.cptec.inpe.br/geonetcast/es/products/RA-III-IV-Requirements-v20110321.xls>

- 10) **In what context is satellite data being used for in your service/institution?**

Operations	<input type="checkbox"/>
Research and Development	<input type="checkbox"/>
Education	<input type="checkbox"/>
Value-added services	<input type="checkbox"/>
Other (pls specify)	

- 10) **Would you like to distribute data and products to other users in Region III and Region IV (e.g., by upload on the GEONETCast-Americas system)?**

No	<input type="checkbox"/>
Yes	<input type="checkbox"/>

Give details	
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11) **Would your institution be ready/considering to contribute to a Region III/IV-wide data distribution system by allocating financial and technical resources?**

No	<input type="checkbox"/>
Yes	<input type="checkbox"/>
Give details	

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**CUESTIONARIO SOBRE EL USO DE PRODUCTOS SATELITALES**

**En representación del Grupo de Coordinación de Requerimientos de Datos Satelitales en la Región III y Región IV perteneciente a la Organización Meteorológica Mundial**

1) **País y nombre de su organización / empresa:**

2) **Tipo de organización**

- Servicio meteorológico / hidrológico nacional
- Otro organismo gubernamental operativo
- Organización regional / internacional
- Institución de investigación / académica
- Otros

3) **A) Estás utilizando datos de los satélites:**

- GOES-E     GOES-W     Meteosat-10
- METOP     CBERS     POES     Aqua/Terra     DMSP
- Cloudsat/Calipso     FY-3     METEOR-M     NPP
- SPOT     Oceansat     GOSAT     Landsat     Aquarius/SAC-D
- SMOS     Misiones SAR (Radarsat-2, TerraSAR-X, Cosmo-Skymed, TanDEM-X)
- Jason     TRMM     Megha-Tropiques     HY     COSMIC     Otros

**B) Usted planea utilizar los datos de los satélites:**

- GOES-R
- JPSS     METOP     Sentinel-3     Sentinel-1     Sentinel-2
- FY-3     Landsat     GCOM-W     SMAP     ADM-Aeolus     GPM
- Jason-CS     Otros

4) **¿Cuál es su principal uso de los datos satelitales?**

Pronósticos y alertas meteorológicos	<input type="checkbox"/>
Predicciones y evaluaciones climáticas	<input type="checkbox"/>

Predicciones, alertas y evaluaciones hidrológicas	<input type="checkbox"/>
Oceanografía y meteorología marina	<input type="checkbox"/>
Aplicaciones de la meteorología espacial	<input type="checkbox"/>
Mitigación y prevención de desastres	<input type="checkbox"/>
Monitoreo terrestre (por ejemplo, para la agricultura)	<input type="checkbox"/>
Evaluaciones ambientales	<input type="checkbox"/>
Mapeo socioeconómico	<input type="checkbox"/>
Investigación y desarrollo	<input type="checkbox"/>
Educación y capacitación	<input type="checkbox"/>
Otros (especificar)	<input type="checkbox"/>

**5) Latencia de datos: usted utiliza principalmente**

- Datos en tiempo casi real (latencia 0-48 horas)
- Datos históricos
- Ambos son igualmente importantes para mí

**6) A) ¿Cómo usted recibe y accesa a los datos satelitales? Dar detalles sobre el sistema de recepción (por ejemplo, la antena), según corresponda.**

System		Details
Lectura directa (por ejemplo, HRPT)	<input type="checkbox"/>	
GTS punto a punto	<input type="checkbox"/>	
Internet (ftp, http)	<input type="checkbox"/>	
DVB-S/S2: GEONETCast-Americas	<input type="checkbox"/>	
DVB-S/S2: EUMETCast-Americas	<input type="checkbox"/>	
Otros	<input type="checkbox"/>	

**B) ¿Cómo le gustaría recibir los datos satelitales en el futuro?**

System		Details
Lectura directa (por ejemplo, HRPT)	<input type="checkbox"/>	
GTS punto a punto	<input type="checkbox"/>	
Internet (ftp, http)	<input type="checkbox"/>	
DVB-S/S2: GEONETCast-Americas	<input type="checkbox"/>	
DVB-S/S2: EUMETCast-Americas	<input type="checkbox"/>	
Otros	<input type="checkbox"/>	

**7) ¿Tiene la intención de adquirir estaciones de lectura directa para la próxima generación de satélites?**

Si	<input type="checkbox"/>
No	<input type="checkbox"/>
Comentarios	

**8) Usted tiene conocimiento acerca de los sistemas de GEONETCast / EUMETCast?**

Si	<input type="checkbox"/>
No	<input type="checkbox"/>
Comentarios	



- 9) **Un conjunto inicial de los requerimientos de datos satelitales para las Regiones III y IV ha sido desarrollado. Por favor, comentar y añadir sus requerimientos / necesidades según sea necesario:**

<http://satelite.cptec.inpe.br/geonetcast/es/products/RA-III-IV-Requirements-v20110321.xls>

- 10) **¿En qué contexto se están utilizando datos satelitales en su servicio / institución?**

Operativo	<input type="checkbox"/>
Investigación y Desarrollo	<input type="checkbox"/>
Educación	<input type="checkbox"/>
Servicios de valor añadido	<input type="checkbox"/>
Otros (por favor especifique)	

- 10) **¿Le gustaría distribuir sus datos y productos a otros usuarios en las Regiones III y IV (por ejemplo, poniéndolos a disposición en el sistema GEONETCast Américas)?**

No	<input type="checkbox"/>
Si	<input type="checkbox"/>
Detallar	

- 11) **¿Su institución estaría lista para (o consideraría) contribuir a un amplio sistema de distribución de los datos en las Regiones III y IV a través de la asignación de recursos financieros y técnicos?**

No	<input type="checkbox"/>
Si	<input type="checkbox"/>
Detallar	

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### QUESTIONARIO SOBRE O USO DE PRODUTOS DE SATELITES

**Em representação do Grupo de Coordenação de Requisitos de Dados de Satélites na Região III e Região IV pertencentes à Organização Meteorológica Mundial**

- 1) **País e nome de sua organização / empresa:**

- 2) **Tipo de organização:**

Serviço nacional meteorológico / hidrológico  
 Outro órgão governamental operacional  
 Organização regional / internacional  
 Instituição de pesquisa / acadêmica  
 Outros

- 3) **A) Atualmente você utiliza dados dos satélites:**

GOES-E     GOES-W     Meteosat-10  
 METOP     CBERS     POES     Aqua/Terra     DMSP

- Cloudsat/Calipso     FY-3     METEOR-M     NPP  
 SPOT     Oceansat     GOSAT     Landsat     Aquarius/SAC-D  
 SMOS     Missões SAR (Radarsat-2, TerraSAR-X, Cosmo-Skymed, TanDEM-X)  
 Jason     TRMM     Megha-Tropiques     HY     COSMIC     Outros

**B) Você planeja utilizar dados dos satélites:**

- GOES-R  
 JPSS     METOP     Sentinel-3     Sentinel-1     Sentinel-2  
 FY-3     Landsat     GCOM-W     SMAP     ADM-Aeolus     GPM  
 Jason-CS     Outros

**4) Qual a sua principal utilização dos dados de satélite?**

Previsões e alertas meteorológicos	<input type="checkbox"/>
Previsões e avaliações climáticas	<input type="checkbox"/>
Previsões, alertas e avaliações hidrológicas	<input type="checkbox"/>
Oceanografia e meteorologia marinha	<input type="checkbox"/>
Aplicações do clima espacial	<input type="checkbox"/>
Mitigação e prevenção de desastres	<input type="checkbox"/>
Monitoramento de terra (por exemplo, para agricultura)	<input type="checkbox"/>
Avaliações ambientais	<input type="checkbox"/>
Mapeamento sócio-econômico	<input type="checkbox"/>
Pesquisa e desenvolvimento	<input type="checkbox"/>
Educação e treinamento	<input type="checkbox"/>
Outros (favor especificar)	<input type="checkbox"/>

**5) Latência dos dados: você utiliza principalmente**

- Dados em tempo quase real (latência 0-48 horas)      
 Dados históricos      
 Ambos são igualmente importantes para mim

**6) A) Como você recebe e acessa atualmente os dados de satélite? Dê detalhes sobre o sistema de recepção (por exemplo, antena), conforme apropriado.**

Sistema		Detalhes
Leitura direta (por exemplo, HRPT)	<input type="checkbox"/>	
GTS ponto a ponto.	<input type="checkbox"/>	
Internet (ftp, http)	<input type="checkbox"/>	
DVB-S/S2: GEONETCast-Americas	<input type="checkbox"/>	
DVB-S/S2: EUMETCast-Americas	<input type="checkbox"/>	
Outros	<input type="checkbox"/>	

**B) Como você gostaria de receber dados de satélite no futuro?**

System		Details
Leitura direta (por exemplo, HRPT)	<input type="checkbox"/>	
GTS ponto a ponto.	<input type="checkbox"/>	

Internet (ftp, http)	<input type="checkbox"/>
DVB-S/S2: GEONETCast-Americas	<input type="checkbox"/>
DVB-S/S2: EUMETCast-Americas	<input type="checkbox"/>
Outros	<input type="checkbox"/>

7) **Você pretende adquirir estações de leitura direta para a próxima geração de satélites?**

Sim	<input type="checkbox"/>
Não	<input type="checkbox"/>
Comentários	

8) **Você tem conhecimento sobre os sistemas GEONETCast/EUMETCast?**

Sim	<input type="checkbox"/>
Não	<input type="checkbox"/>
Comentários	

9) **Um conjunto inicial de requisitos de dados de satélite para as regiões III e IV foi desenvolvido. Por favor, comente e adicione seus requisitos / necessidades, conforme necessário:**

<http://satellite.cptec.inpe.br/geonetcast/es/products/RA-III-IV-Requirements-v20110321.xls>

10) **Em que contexto os dados de satélite estão sendo utilizados em sua instituição / serviço?**

Operacional	<input type="checkbox"/>
Pesquisa e Desenvolvimento	<input type="checkbox"/>
Educação	<input type="checkbox"/>
Serviços de valor agregado	<input type="checkbox"/>
Outros (favor especificar)	

10) **Gostaria de distribuir seus dados e produtos a outros usuários nas Regiões III e IV (por exemplo, disponibilizando-os no sistema GEONETCast Americas)?**

Não	<input type="checkbox"/>
Sim	<input type="checkbox"/>
Detalhar	

11) **Sua instituição estaria pronta para (ou consideraria) contribuir para um sistema de ampla distribuição de dados nas Regiões III e IV através da atribuição de recursos financeiros e técnicos?**

Não	<input type="checkbox"/>
Sim	<input type="checkbox"/>
Detalhar	

## ANNEX III

### **Options for positioning GOES-13 imager scanning frames during Rapid Scan Operations** (Note circulated by WMO Secretariat, 5 Dec 2013)

Taking into consideration:

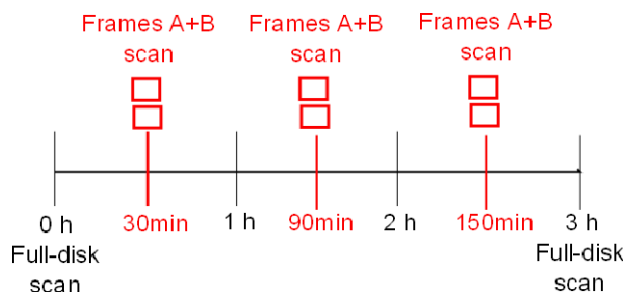
- Feedback by members of the RA-3-4-SDR Group;
- The observations and products provided by the GOES-13 imager;
- Observation requirements of WMO Application areas (source: <http://www.wmo-sat.info/oscar/applicationareas>) that can be addressed by the GOES-13 imager:
  - o Nowcasting requires basic imagery and derived products (clouds, winds), with rapid repeat cycles (few minutes to 2h);
  - o Ocean applications: except for cloud cover, these require repeat cycles above 3h;
  - o NWP, particularly high-resolution models, require observation repeat cycles 15-60 minutes;
- Buenos Aires serving as a Volcanic Ash Advisory Centre (VAAC) for the South American sector under WMO and ICAO auspices;
- Technical boundary conditions defined by the GOES-13 operational schedule;
- The possibility that NOAA eventually move the southern boundary of the “Northern Hemisphere” frame further southwards;
- The availability of frequent polar-orbiting observations over the higher latitudes that are not optimally covered by GEO anyway;
- The availability of 15-minute imagery from Meteosat over the Eastern part of Brazil;
- The WMO Manual on the Global Observing System which recommends that “The constellation of satellites in geostationary orbit should provide full disc imagery at least every 15 minutes, throughout a field of view between 60°S and 60°N”<sup>1</sup>;

please consider the following options for positioning two scan frames (note that frame sizes are approximate and based on the NOAA letter to WMO from 5 Aug 2013).

I invite each Member of RA-3-4-SDR Group to indicate their preferred three options, in order of priority, by 10 December 2013.

[N.B.: Selecting any one of these options means that, during Rapid Scan Operations of the NOAA-13 satellite, the two frames are each scanned once every hour. The areas outside the frames are covered every three hours during a Full Disk scan of the entire imager field of view. During normal operations, i.e. outside Rapid Scan Operations, the S. Hemisphere is covered every 30 minutes.]

As for timing the scans, the following option is suggested – please provide feedback as well:



Having received your feedback, WMO develops a proposal, for discussion and endorsement by the Group. WMO will then send an official response to NOAA. In its correspondence with all Members in

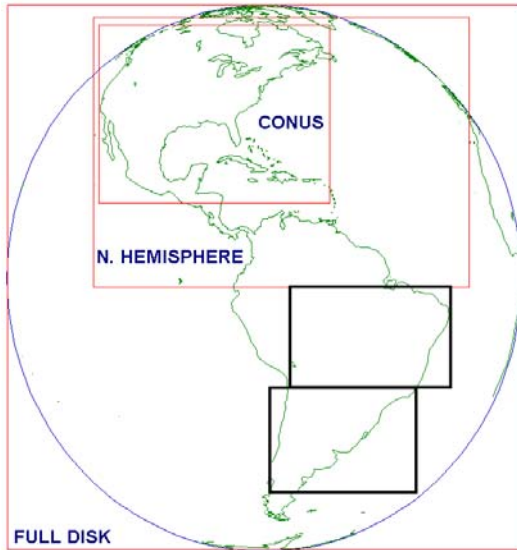
<sup>1</sup> Commission for Basic Systems, Fifteenth Session, Abridged final report with resolutions and recommendations, WMO-No. 1101.

[ftp://ftp.wmo.int/Documents/PublicWeb/mainweb/meetings/cbodies/governance/tc\\_reports/english/pdf/1101\\_en.pdf](ftp://ftp.wmo.int/Documents/PublicWeb/mainweb/meetings/cbodies/governance/tc_reports/english/pdf/1101_en.pdf)

RA III and RA IV, WMO will inform users in those countries that are currently not Members of the Group, of these plans.

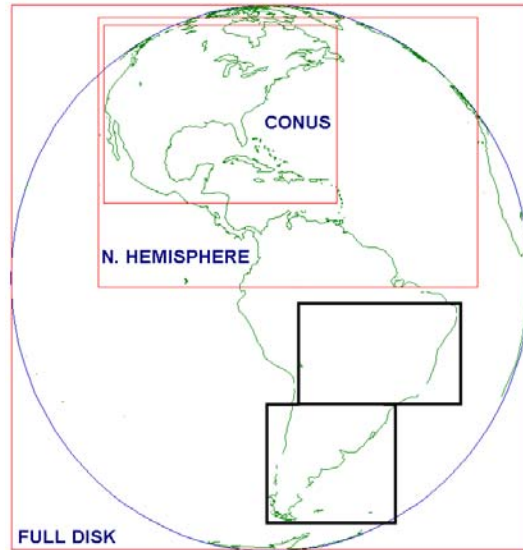
**Option A: (quoted from NOAA letter)**

*GOES East Rapid Scanning scenario @75°W*



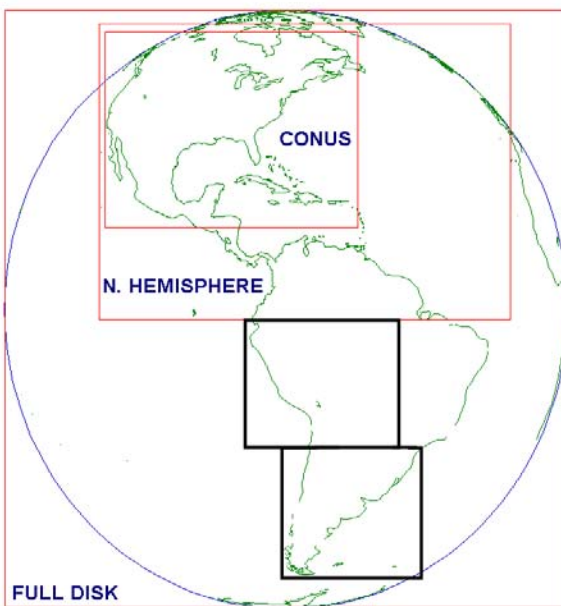
**Option B:**

*GOES East Rapid Scanning scenario @75°W*



**Option C:**

*GOES East Rapid Scanning scenario @75°W*



**Option D:**

*GOES East Rapid Scanning scenario @75°W*

