The ESA EGNOS Message Server (EMS)



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- Overview of EMS
- Access to EMS
- Utility of EMS







INTRODUCTION TO EMS (I)



●EMS = EGNOS Message Server;

•EMS service will allow getting SBAS messages already broadcast by EGNOS, through the Internet. (Planning: service ready in July 2003)

•Messages are obtained in the form of archives, using the FTP protocol.

•EMS has been integrated as a part of the ESA SISNeT platform. However, the access to EMS is independent of the access to SISNeT.





INTRODUCTION TO EMS (II)



•The EPO frequently needs to get already broadcast EGNOS messages for System Engineering activities.

SISNeT allows getting EGNOS messages in real-time. Messages already broadcast cannot be obtained (only the most recent ones, for quick initialisation of receivers).

•Existing tools (e.g. ESPADA) can benefit from the access to an archive of EGNOS messages.

•An archive of EGNOS messages is key for the development of powerful SIS analysis and performance monitoring tools (e.g. SISNeTlab).

•EMS can constitute a useful tool for EGNOS receiver development and testing.









Overview of EMS











OVERVIEW OF EMS























FTP ACCESS TO EMS

- •At this time, EMS is accessed exclusively through FTP.
- •EGNOS messages are stored in the EMS as computer files.
- •ESA has decided to make EMS a public service .
- •Only file download is allowed (i.e. upload forbidden).
- •A new file is written each hour, containing the last hour of EGNOS messages (i.e. 3600 messages).





CHANGES ON FILE ORGANISATION







CHANGES ON FILE CONTENTS

- EMS files are text archives;
- They are made of data records;
- •Each data record is one line of text, and includes one EGNOS message;
- •Each file contains 3600 data records (1 hour of messages)

GEO PRN Year Month Day hr mn s MT EGNOS Message blank







FILE CONTENTS (II)

🖾 h21.ems - Notepad									
File	Edit	F	ormat	He	elp				
120	03	1	27	21	6	23.1	0	9A000000000000000000000000000000000000	
120	03	1	27	21	6	24.1	2	C608000057FE400000000000000000000000000003A57BBBBBBBB9031D740	
120	03	1	27	21	6	25.1	3	530C3FA7FBFFF800009001801C000000000480000016579DEBBBABB8706BD80	
120	03	1	27	21	6	26.1	4	9A100003FD400000000000000000000000000000000	
120	03	1	27	21	6	27.1	0	C6000000000000000000000000000000000000	
120	03	1	27	21	6	28.1	2	5309000057FE8000000000000000000000000000000000000	
120	03	1	27	21	6	29.1	3	9A0D3FA7FC0000000940100200000000004C0000016579DFBBBABB9D2BBD40	
120	03	1	27	21	6	30.1	4	C6110003FD8000000000000000000000000000000000	
120	03	1	27	21	6	31.1	0	53000000000000000000000000000000000000	
120	03	1	27	21	6	32.1	2	9A0A0000053FE0000000000000000000000000000000	
120	03	1	27	21	6	33.1	3	C60E3FABFBFFF40000900100180000000000440000016579DFBBBABBADD0A980	
120	03	1	27	21	6	34.1	4	53120003FD4000000000000000000000000000000000	
120	03	1	27	21	6	35.1	0	9A000000000000000000000000000000000000	
120	03	1	27	21	6	36.1	2	C60800005BFEC000000000000000000000000000000000000	
120	03	1	27	21	6	37.1	3	530C3FA3FBFFFC000090014000000000000480000016579DBBBBABBBDFE4000	
120	03	1	27	21	6	38.1	4	9A100003FD800000000000000000000000000000000	
120	03	1	27	21	6	39.1	0	C6000000000000000000000000000000000000	
120	03	1	27	21	6	40.1	2	530900005BFE800000000000000000000000000000003A57BBBBBBBBB98E61E80	
120	03	1	27	21	6	41.1	3	9A0D3FABFC3FFC00009401801C00000000004C0000016579DBBBBABB931E9140	
120	03	1	27	21	6	42.1	4	C6110003FD4000000000000000000000000000000000	-









Overview of EMS



Access to EMS







Conclusions





EMS – ESPADA LINK



SISNeTlab – EMS link



Any other tool requiring access to archives of EGNOS messages can be easily linked to EMS via FTP





Other applications

Test of EGNOS receiver algorithms;

 Computation of EGNOS performance maps, by combining EGNOS messages from EMS with GPS measurements from IGS sites, and interpolating results;

 Continuous monitoring of SIS compliance to MOPS (ESA IMAGE Project);

•Support to experiments: a GPS-only receiver can be used, combining its data with the EGNOS messages (from EMS) offline.









Conclusions





Main Conclusions

- •EMS will provide public access to already broadcast EGNOS messages (in the form of files) over the Internet, via FTP.
- •Yearly and daily directories. Hourly EGNOS message files.
- •EMS files are ASCII archives containing lines of text (i.e. data records). Each data record contains an EGNOS message.
- EMS will be key for EPO System Engineering studies;
- •Simulation / analysis tools (e.g. the ESA ESPADA software) can be easily linked to EMS.
- •EMS can constitute a useful tool for EGNOS receiver development and testing.
- EMS is integrated into the ESA SISNeT platform. However, the access to EMS is independent from the access to SISNeT.
- •EMS Service availability: scheduled before mid July 2003. Please, check status at www.esa.int/sisnet



