

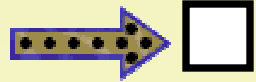
# The ESA EGNOS Message Server (EMS)



Receiver Workshop. Thursday, 3<sup>rd</sup> of July 2003.  
ESA HQ, Paris (France).  
Prepared by Félix Torán-Martí and J. Ventura-Traveset

# PRESENTATION OUTLINE

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Introduction



Overview of EMS



Access to EMS



Utility of EMS



Conclusions

# INTRODUCTION TO EMS (I)

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## WHAT IS EMS?

- 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)

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## WHY?

- 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.

# PRESENTATION OUTLINE

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Access to EMS

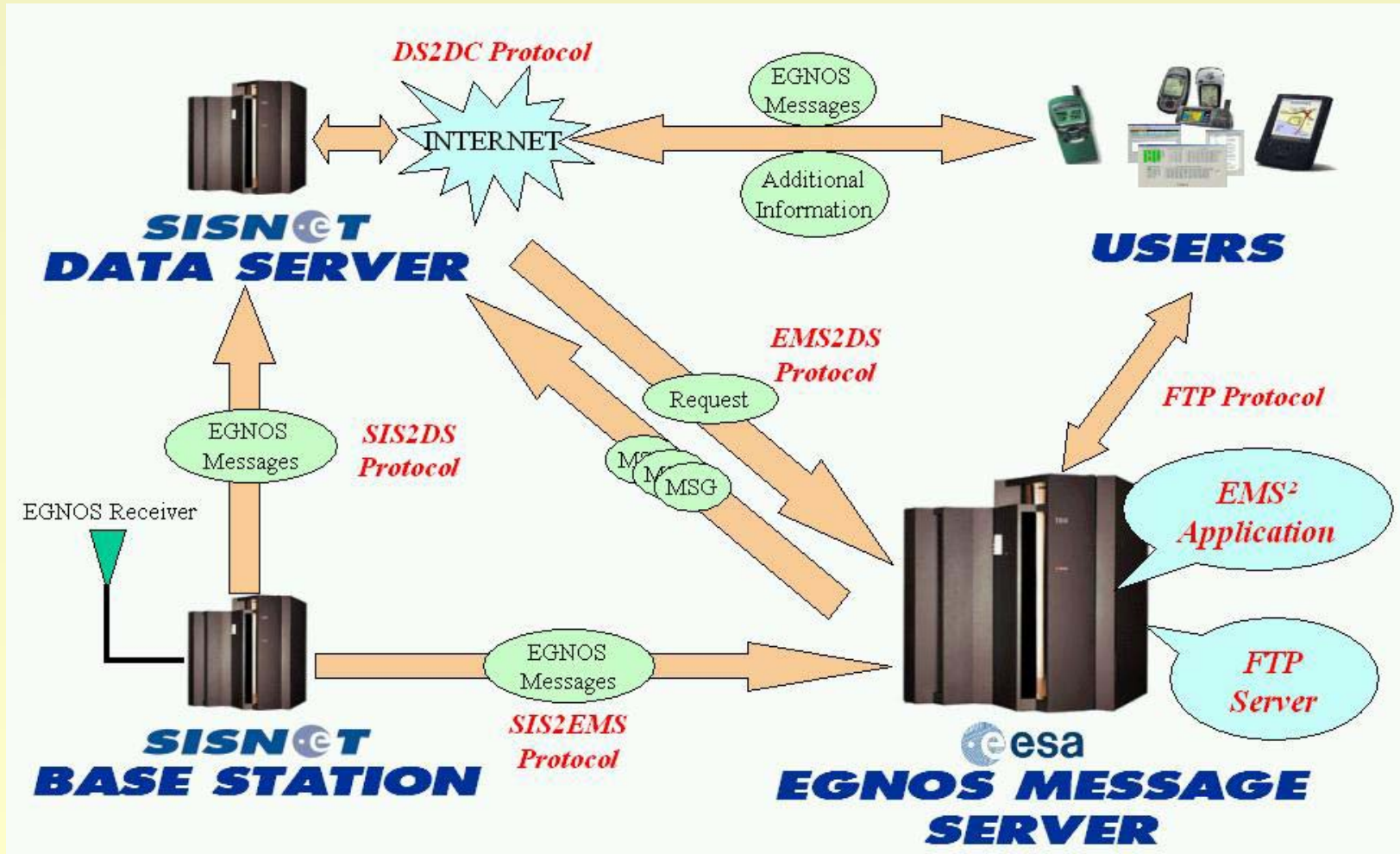


Utility of EMS



Conclusions

# OVERVIEW OF EMS



# PRESENTATION OUTLINE

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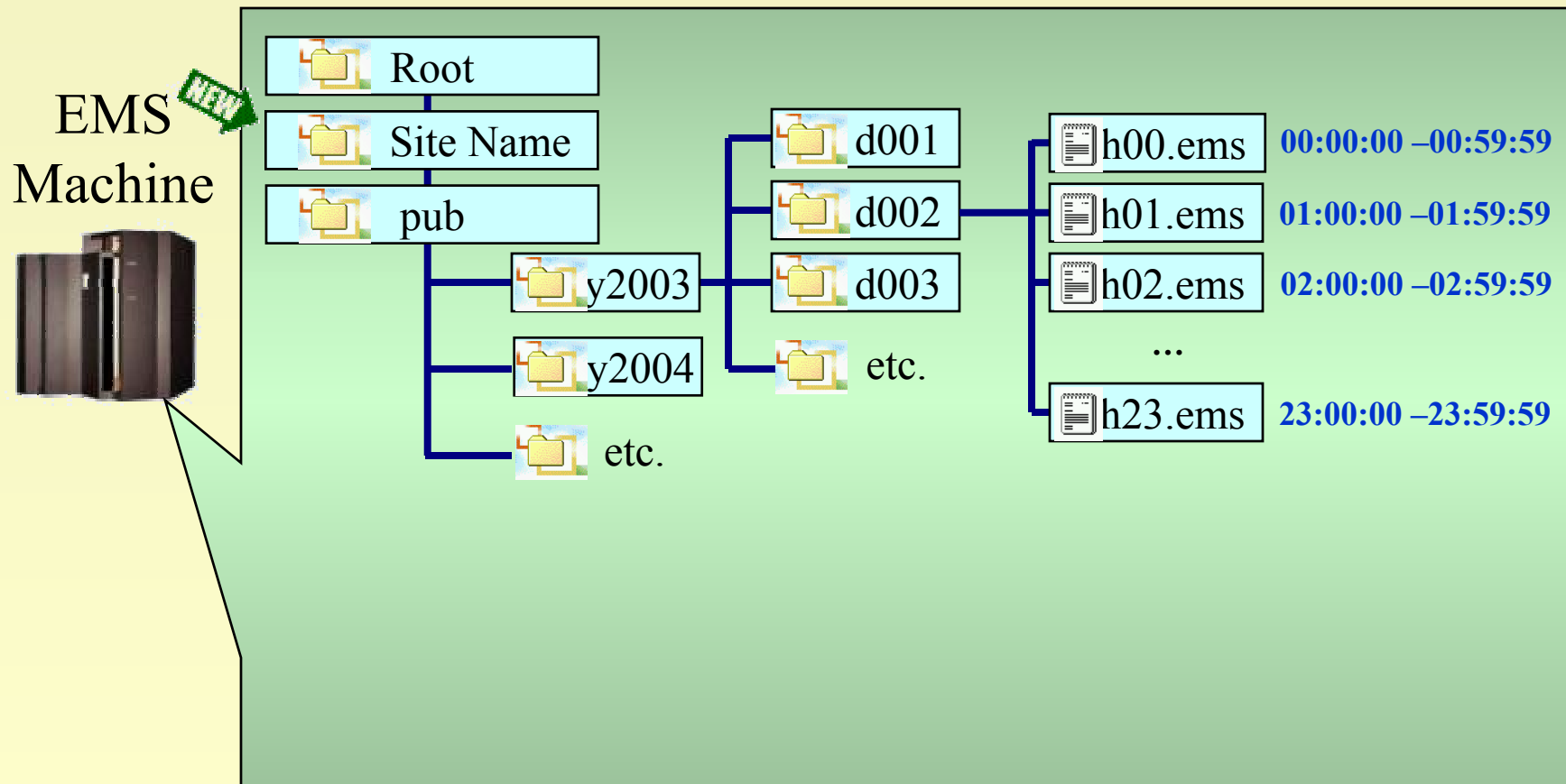
# FTP ACCESS TO EMS

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- 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).



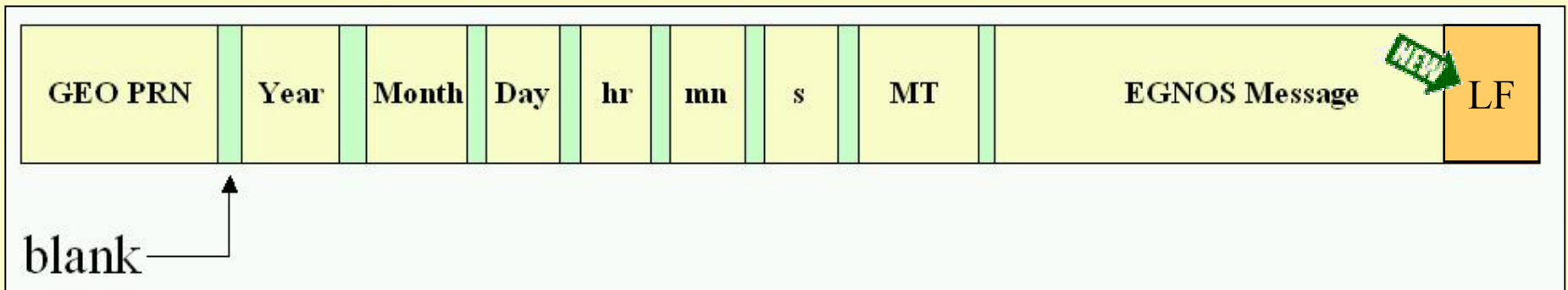
# CHANGES ON FILE ORGANISATION



# 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)

## STRUCTURE OF A DATA RECORD





# PRESENTATION OUTLINE

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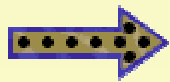
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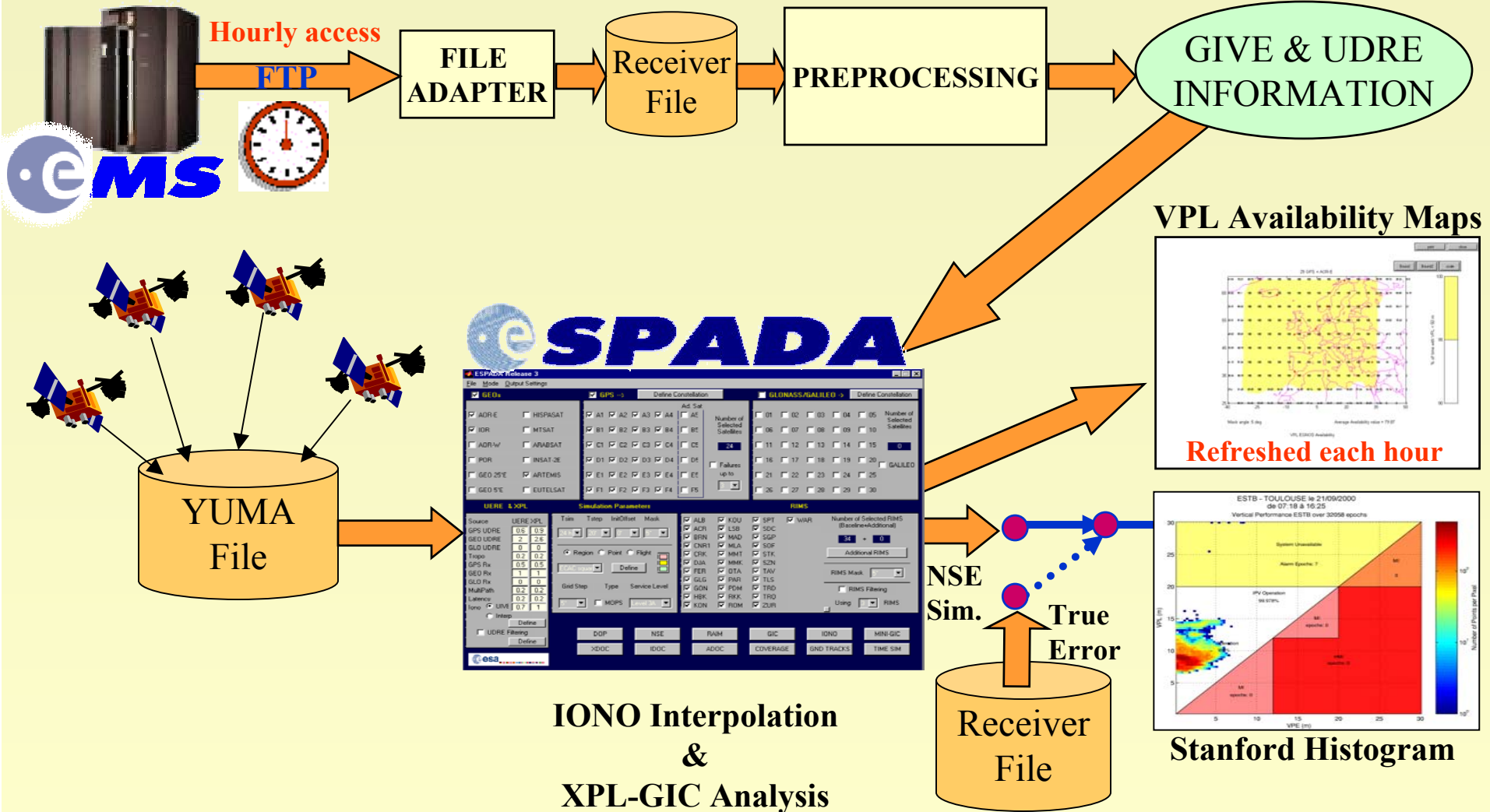


Utility of EMS

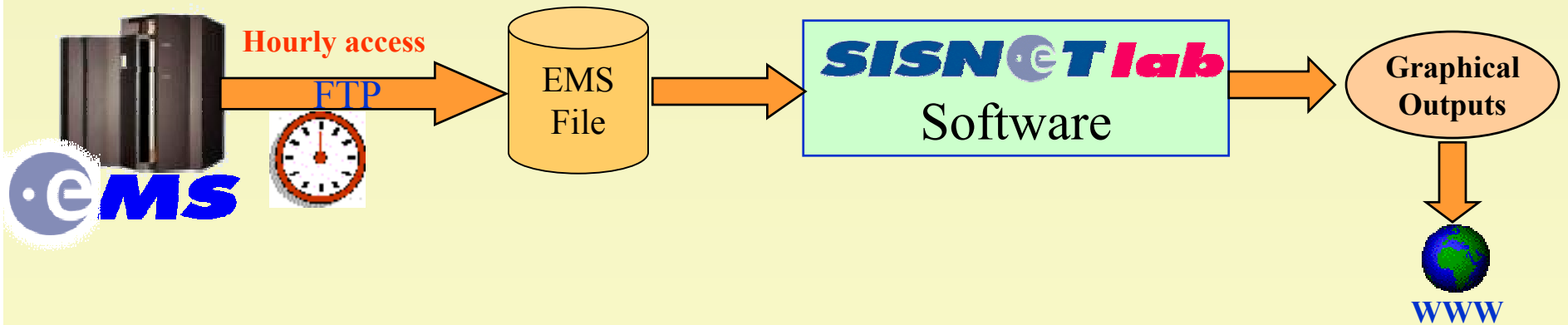


Conclusions

# 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

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- **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.

# PRESENTATION OUTLINE

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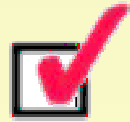
Introduction



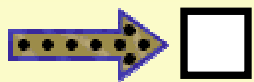
Overview of EMS



Access to EMS



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Conclusions



# Main Conclusions

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- 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](http://www.esa.int/sisnet)