Design and Evaluation of Program Specific Information and Service Information Tables and an Electronic Service Guide for Mobile TV testbed at the Network Systems Lab

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Outline

• Introduction to DVB-H
• Importance of signalling (PSI/SI tables) in DVB-H
• Electronic Service Guide
• How are PSI/SI and ESG related?
• Implementation
• Conclusion and Future Work
Introduction to DVB-H

• ITU press release: 5 billion cell phone users by 2010.

• Increasingly powerful mobile devices capable of rendering multimedia content and proliferating demand for content.

• Why DVB-H? Traffic friendly broadcast system.
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Importance of signalling (PSI/SI tables) in DVB-H

DVB-H SI

- **NIT**: Tuning information like code rate, bandwidth, frequency etc.
- **INT**: IP platform information, destination IP address, frame size, time-slicing and mpe-fec etc.
- **SDT**: Service ID, service names, EIT present/following, running status etc.
- **TDT**: Time
Importance of signalling (PSI/SI tables) in DVB-H

DVB-H PSI

• PAT: Lists all services in the transport stream and maps their corresponding PMT_PIDs.

• PMT: Identifies all elementary streams (audio channel, video channel etc.) within a service.
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Electronic Service Guide

Rich text descriptions of TV channels in XML, image, video or other descriptive formats.
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How are PSI/SI and ESG related?

• Receiver captures ESG. Using transport stream ID and NIT, it gets tuning information of service.

• After tuning, receiver looks for SDT for extracting service information.

• User accepts service ID (same as program number in PAT)
How are PSI/SI and ESG related?

• Using the mapping in PAT, the available elementary streams are identified and corresponding PMTs are accessed.

• The PMT provides information on the program.

• Finally, using the original_network_id in NIT, user is able to pay for the service.
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Implementation

- Six PSI/SI tables were implemented under PSI/SI class.
- PAT, PMT, INT, NIT, SDT, TDT.
- TS file generated was verified using dvbSAM and Enensys Divicatch analyser.
- Data transmitted and recognized but jitter unresolved.
Implementation

• Began implementation of ESG_Reader class.
• Modified configuration manager to accept ESG bootstrap and ESG files.
• Work in progress.
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Conclusion and Future Work

- Signalling information is the key to receive and view multimedia content on mobile TV networks.
- Corruption in PSI/SI and ESGs are impediments to a good user experience.
- ESG implementation is to be completed and further investigation required to get rid of jitter in programs.
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Thank you!