

The Need For Coordinated Exchange Of PSIP Data

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PSIP

- What we will cover:
 - Why is Encoda interested in this?
 - PSIP as it is implemented today
 - Who has this PSIP data?
 - The solution (how do we get it out?)



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PSIP

- Encoda's products are involved in three points in the PSIP chain
 - Program Management
 - Traffic
 - Automation



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PSIP

- Lessons learned from past interfacing efforts

Traffic



Automation



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PSIP

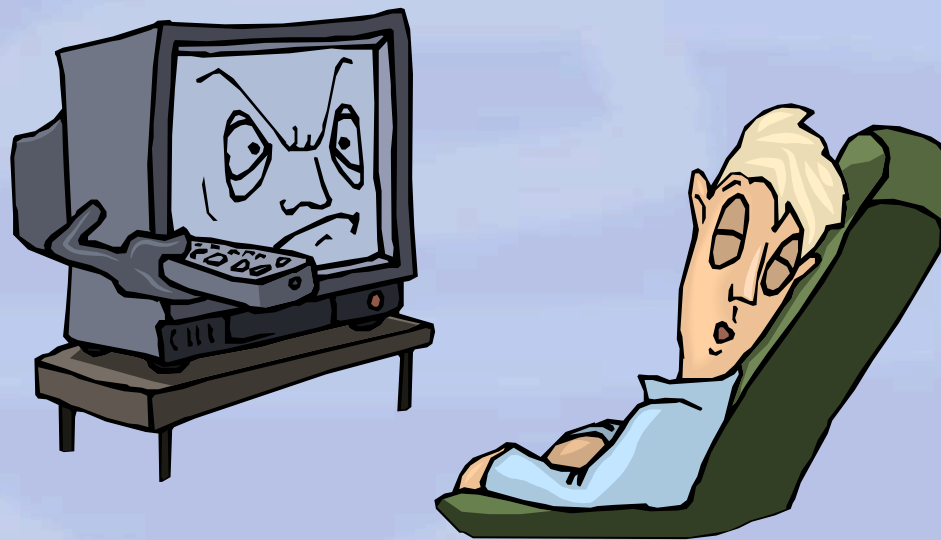
- Program and System Information Protocol
- Defined in ATSC Standard A/65B (get it at www.psip.org).
- Contains a collection of tables, containing EPG and tuning details.



PSIP

- Being broadcast today:

Static PSIP



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- Why Will Static PSIP Be Insufficient?
 - Number of viewers increasing
 - Viewers are becoming more savvy
 - Devices (e.g. PVRs) becoming dependent on PSIP
 - Competitive disadvantage
 - Viewer satisfaction



PSIP

- FCC Report & Order of Sept 7th. 120 days to comply (Jan 4, 2005).
 - Requires: MGT, STT, VCT, 4+ EITs
 - FCC expects “correct program titles that can inform consumers about which programs are planned to be broadcast”
- Does this imply dynamic PSIP???



PSIP

- Why isn't Everyone Sending Dynamic PSIP now?
 - Understanding PSIP can be intimidating
 - No staff to manually manage this data
 - Metadata is "trapped" in diverse systems
 - No standardized means of exchange



PSIP

Listing Service

Program Management System

Traffic & Billing Systems

Automation System

PSIP Generator

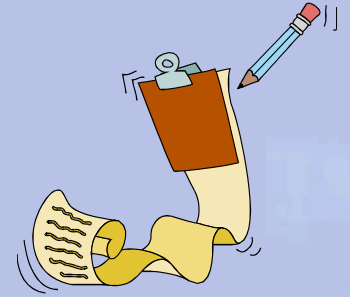


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Listing Service

- Very rich data
- Accurate 14 days + from broadcast
- Not so accurate closer to broadcast
- Unlike in-house systems, no common means of material identification

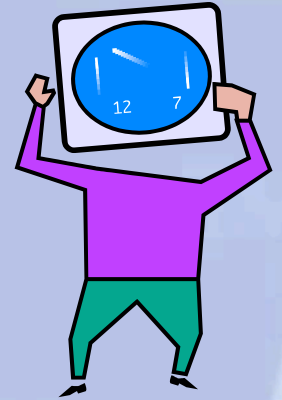


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Program Management System

- Rich data
- Accurate until a few days from broadcast
- Not so accurate closer to broadcast
- Very few terrestrial broadcasters use one

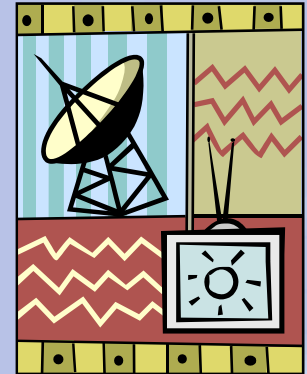


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Automation System

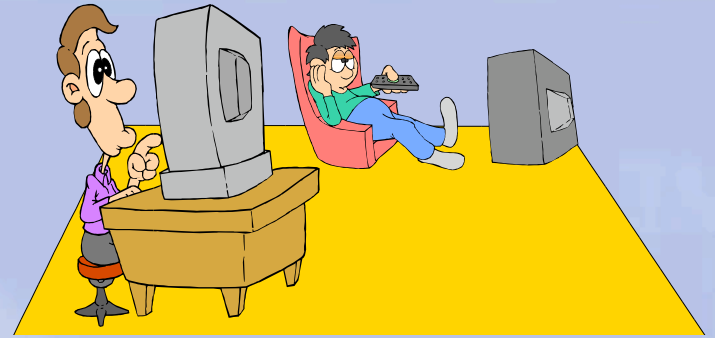
- Very thin on PSIP data
- Typically no knowledge of schedules much more than 1-3 days in advance.
- The only system that is available 24x7x365, often with better redundancy/reliability than other systems.
- The only system with accurate information close to broadcast and in real time.



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PSIP Generator



- Must know all PSIP details from 16 days in advance up to real-time.
- Largely a slave to other systems which manage this data already.

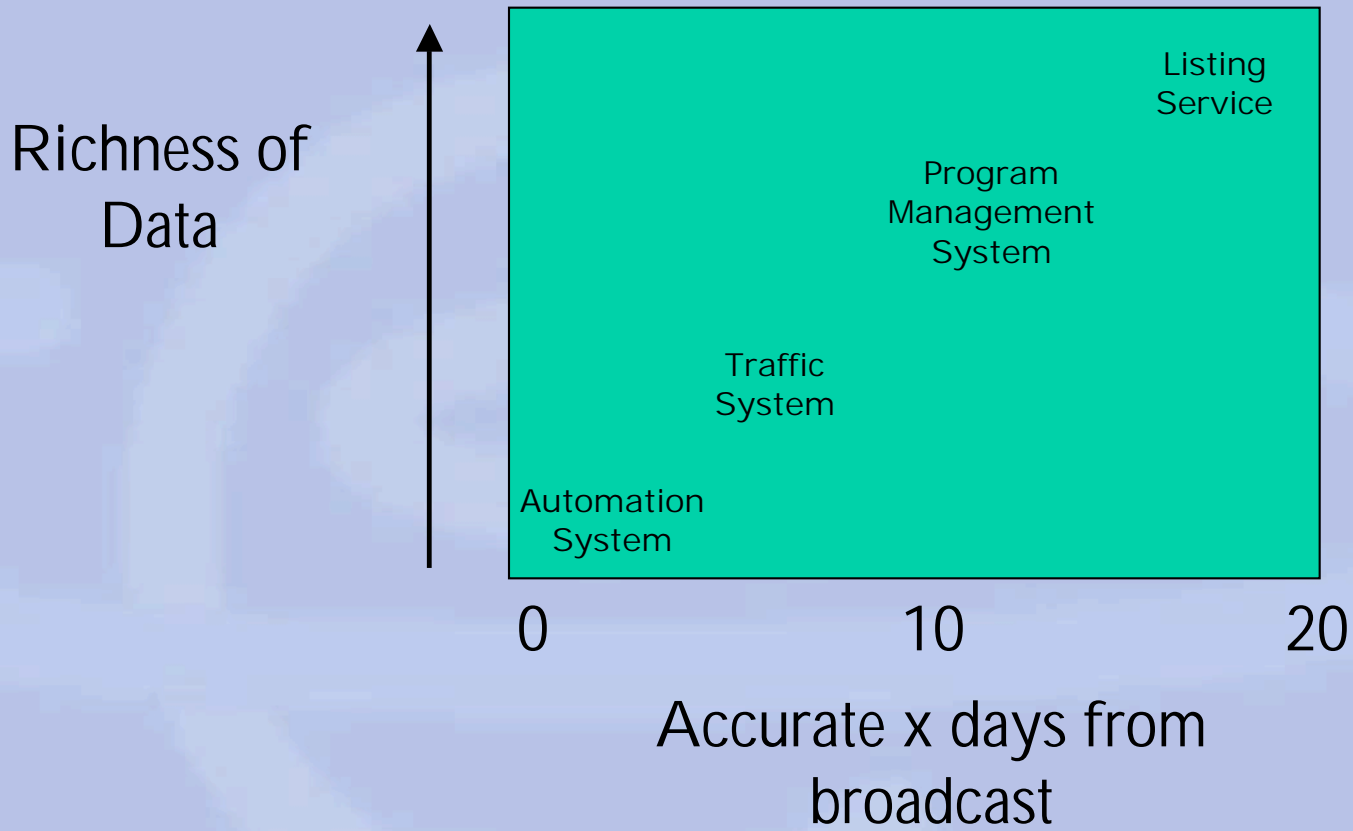


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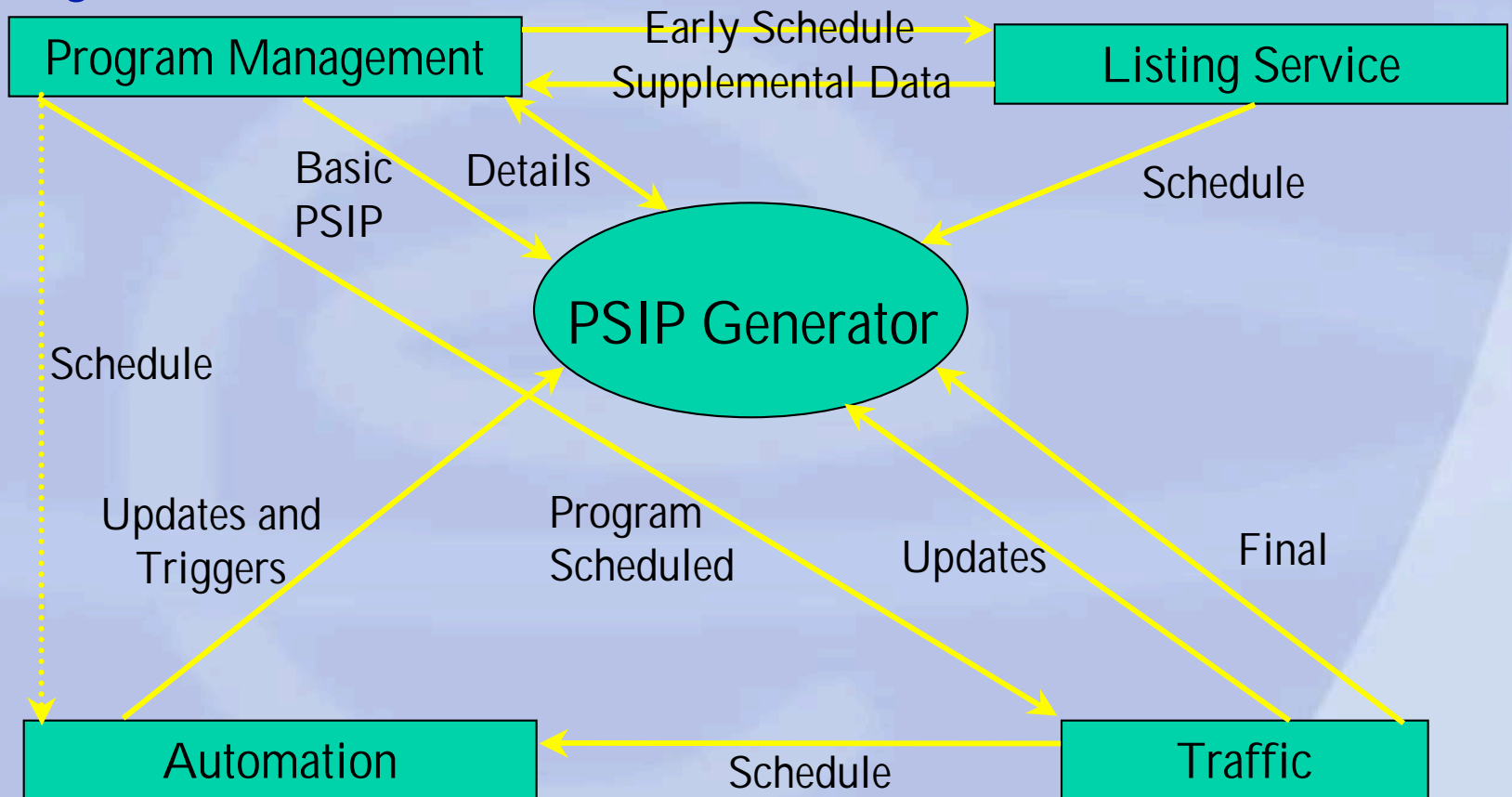
- Challenges:
 - Granularity of data within systems
 - Who owns the data as a function of time?



PSIP



- Many Interfaces: One Solution Needed



PSIP

- Eleven Interfaces: One Solution Needed

Program Management

Listing Service

PMCP

PSIP Generator

PMCP

Automation

Traffic



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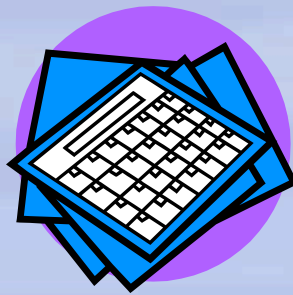
PSIP

- Programming Metadata Communication Protocol



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- A possible scenario
 - Months in advance, a new reality show, *Last Magician Standing*, is scheduled for November 15, 2004, at 8:00pm. This is done in a Program Management System.



PSIP

- A possible scenario
 - On November 1st, the Program Management System sends this to the Listing Service.

November 2004

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	 15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				



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PSIP

- A possible scenario
 - On November 10th, the Program Management System sends this to the Traffic System.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	 15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				




- A possible scenario
 - On November 12th, Traffic sends this to Automation.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	 15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				



- A possible scenario


- On November 14th, it is announced that the President will be speaking from 8pm-8:30pm. It is decided to run *Last Magician Standing* beginning at 8:30pm.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	 15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				



PSIP

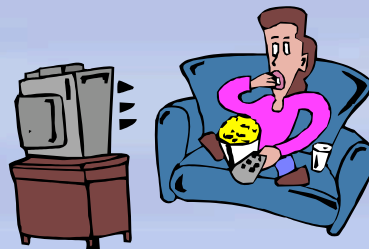
- A possible scenario
 - Since November 14th is a Sunday, this change is made in Automation. Automation must communicate this change to the PSIP Generator.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	6
7	8	9	10	11	12	13
14		16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				



- A possible scenario

- On November 15th, the President is unusually long-winded, it's obvious by 8:28pm that he is not going to wrap up by 8:30pm.



- A possible scenario

- At 8:29pm, automation notifies the PSIP Generator to hold the current event until a trigger is received for the next event (*Last Magician Standing*), as its start time is now uncertain.



PSIP

- A possible scenario

- At 8:45pm, the President wraps up his speech, and the Automation System sends a trigger to the PSIP Generator as it begins to roll the beginning of *Last Magician Standing*.



PSIP

- It could be far worse than this!
 - This was a fairly simple & common scenario, particularly for any broadcaster dealing with any live events.



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PSIP

- What do you need?
 - Systems capable of sharing PSIP data
 - PSIP Generator
 - Listing Service
 - Traffic System
 - Automation System
 - Program Management System (if applicable)



What Could Each System Supply?



PSIP

- **TVCT: Terrestrial Virtual Channel Table**

Virtual channels being sent (names, major-minor channel numbers, etc.)

Could come from any of the systems

	12:00 N	12:30 PM	1:00 PM	1:30 PM
57-4 PBS-YOU	Literary...	Literary...	Art of the Western ...	
57-3 PBS-K	Sesame Street	Mister ...	Teletub...	
57-2 PBS-KID	Calliou	Teletub...	Barney	Mister ...
57-1 PBS-XP	American High	Arthur	Betwee...	



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PSIP

- EIT: Event Information Table

All systems have this, but only Listing Services and maybe Program Management have it formatted properly.

Thursday Afternoon Family 12:03 PM Thu 6/14/01

"American High" [TV-PG L S] Bustle! Out/Winter Chill

6/14	12:00 N	12:30 PM	1:00 PM	1:30 PM
57-4 PBS-YOU	Literary...	Literary...	Art of the Western ...	
57-1 PBS-K	Sesame Street	Mister ...	Teletub...	
57-2 PBS-K D	Caillou	Teletub...	Barney	Mister ...
57-3 PBS-KP	American High	Arthur	Between...	

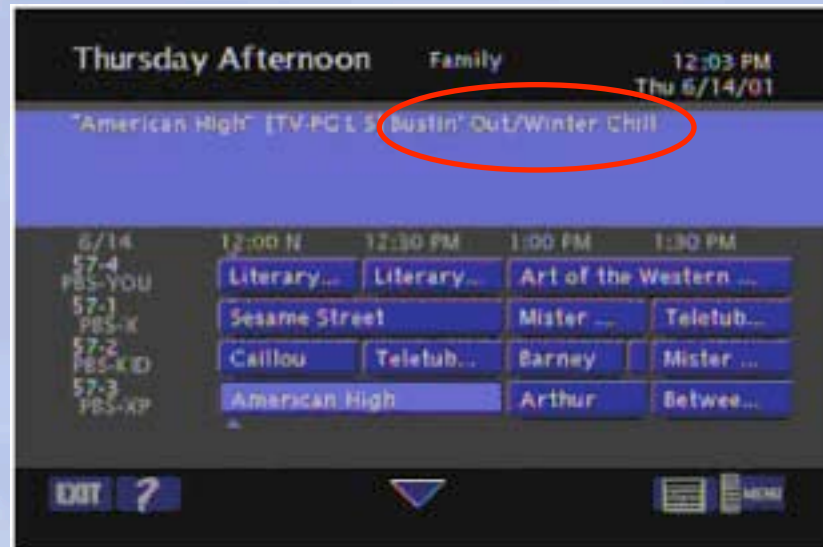
EXIT ?



PSIP

- ETT: Extended Text Table

Only exists in Listing Services and Program Management



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- DCCT: Directed Channel Change Table

If you want it to happen on time, automation is the answer. However, can be scheduled in advance from Program Management and/or Traffic.



- What is the status of PMCP?
 - Proposed Standard
 - Companies like Encoda are working on trial implementations of PMCP.



Conclusion

- Static PSIP isn't going to be sufficient
 - Re-entering duplicate data across systems is impractical (time and errors).
 - There are initiatives and technologies there to help.
 - Be sure your chosen vendors are on top of this and will be able to address your needs.



PSIP

- Only through rich, open interfaces such as PMCP can Encoda offer broadcasters the opportunity to choose the systems that best suit them, knowing they will all work together.



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Conclusion

Thank You

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