ESG Recommendations

ESG Subgroup OTAG

ESG User and Broadcaster Constraints

How much programming information does a consumer need to have?

- How far ahead are users interested?
- What are the constraints on spectrum utilization?

Different requirements for connected and unconnected devices

- Over the air considerations versus back channel
- One transmission must cover both cases
- What broadcaster information will the carriers provide

How to manage connected versus unconnected devices

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ESG Broadcaster Requirements

“Now” is not enough

- Missing info on the next program is a bad user experience

Now Plus Next Event (if soon) is what broadcaster should send

- In phase with content snacking user behavior
- Sending Logo of TV stations is recommended

Next Few Events might be desirable in short term

- In case some users want to plan their viewing sessions

Two/Three Days is as much as is recommended for streaming services

- May create feeling that there is a schedule, it is a “TV channel”!
- i.e. “When is there a show related to sports ?”

Service Guide – Management

Envisioned Consumer Experience

Starting from *"bored with current content"*
but have been tuned to just this channel a *"long"* time
(ignoring power up and other operational scenarios)

One-Way Devices[1] should see:

- What is on now and on next (all ensembles on this RF channel)
- All services the device has found (service brand) – but not their events

Two-Way Devices should see:

- What is on now and on next *(all ensembles on this RF channel)*
- Other services and events now on and soon on -- obtained by internet fetch *(or background update)* that started *(at the latest)* when the "EPG" button was pressed

1. Defined as not currently connected to an interaction channel

User Experience

How to Provide the "Best" User Experience – Considerations:

Reasonable "Acquisition Time"

- Access is immediate for cached ESG *(2-way devices should store it).*
- A non-2-way device after being turned off *(X amount of time)* will not have ESG
- For 1-way devices the acquisition time for the 'instant' SG is carousel cycle time dependent – ~ 20 sec has been recommended. The signaling should carry info on the current event (title, start time, duration, other characteristics)

Background Downloading

- After entering a sleep /power saving mode we recommend 2-way devices should refresh ESG from the source(s) on an periodic basis.
- The acquisition requests for the instant(now on) SG data should be made at half the average event viewing time – this would make it likely that "what is on now" choices would be available at event boundaries. The estimated time required for the 1-way device update would be approximately 15 seconds times X number of broadcasters in the market. OMVC suggests the default average access time should be 15 minutes, unless the receiver supports changing it based on the planned start of the next event it does not have in cache.

Minimize User's "Perceived Waiting Time" when Changing Channels

- Display of something besides a please wait message is recommended *(such as ads and/or logo)*
- Each Ensemble is expected to contain the SG data and next event for all services transmitted for a given broadcaster.

ESG Implementation Requirements

- Internet service (source) for those broadcasters who want to be shown on the devices
- Minimal set of SG data on broadcasters' transmissions
- All receivers gathering and using SG data independent of broadcasters' (vendor) implementation

Specific ESG Recommendations

1. Signaling Only – What Services Exist?

- Required by standard – essential
- Receiver scans all frequencies to obtain.

2. "Instant ESG"

- Recommended that each Broadcaster send information to enable "My"
- Range: What's on now to what's on next for "Me"
  - Every service has the SG IP packets covering all services
  - Fresh data for all devices – the only SG data for 1-way devices
  - All devices get what the current RF channel has (fast)

3. "Longer" ESG

- Optional
- Sent in one ensemble, or each, at low data rate
- Range: What's on next 3 hours (broadcaster chooses # hours)

4. "Full" ESG

- Optional
- Range: What's on for covered stations for next ~ 3 days
  - Via return channel mode only – each broadcaster points to one – but can be more than one source – delivery methodology determined by others.

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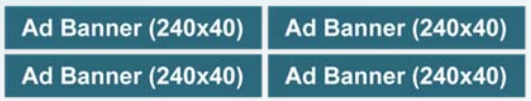
Example of Bandwidth Computation for “Instant” ESG

Service Guide Sessions per Station (Triplecast)

Announcement Session

For TV Channels

Ad Banners x 4



Unit	Qty	Per Station
0.7 kbps[1,2]	x9	5 kbps
3.3 kB[3]	x9	23.6 kbps
~2 kB[4]	x9	14.4 kbps

Total: ~43 kbps per Station with 3 Mobile Services

[1] For an SG Downloading time set to 10 sec, rates scaled from a DC showcase station’s

[2] For “Instant” ESG per slide 7

[3] Downloading time for all logos is 10 seconds

[4] Dimension and size is 2x a MMA standard Ad size, assuming 90 degree rotation of display when have ESG, or “end” pillar if not

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Example of Bandwidth Computation for “Longer” ESG

Service Guide Sessions per Station (3 Channels)

Announcement Session

For TV Channels

SGDD

Programs + Schedule + Details

Programs + Schedule + Details

Logo

Ad Banners x 3

Ad Banner (240x40) Ad Banner (240x40)

Ad Banner (240x40)

Unit	Qty	Per Station
0.9 kbps[1,2]	x3	2.8 kbps
3.3 kB[3]	x3	7.9 kbps
2 kB[4]	x6	9.6 kbps

Total: ~20.3 kbps per Station with 3 Mobile Services

[1] For an SG Downloading time set to 10 sec, rates scaled from a DC showcase station’s

[2] For “Longer” ESG per slide 7

[3] Downloading time for all logos is 10 seconds

[4] Dimension and size is 2x a MMA standard Ad size, assuming 90 degree rotation of display when have ESG, or “end” pillar if not

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Example of Bandwidth Computation for “Full” ESG

Service Guide Payload per Station (when delivered via broadcast)

Announcement Payload

For TV Channels

Qty

SGDD

Programs + Schedule + Details

Programs + Schedule + Details

16.6 kBytes[1]
(3 Days, 3 Services)

Logo

10 kBytes
(3 Services)

Ad Banners x 2

Ad Banner (240x40) Ad Banner (240x40)

2 kBytes/Banner[2]
(Station Decides Number of Banners)

Total: ~86.6 kB per Station (Assuming 30 Banners)[3]

[1] Same as full ESG as defined on slide 7, size scaled from a DC showcase station’s

[2] Dimension and size is double a MMA standard Ad size, assuming 90 degree rotation of display when have ESG, or "end" pillar if not

[3] Showcase SG average **50 kB** per station

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References

Mobile Marketing Association's *Mobile Advertising Guidelines* at:
http://www.iab.net/iab_products_and_industry_services/508676/mobile_guidance/mobileadformats

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