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1. Introduction

1.1. Executive Summary

This document defines functionality associated with and the messaging used to control Program-Specific Ad Insertion. Program-Specific Ad Insertion is the scheduling and insertion of a Spot into a digital broadcast Program based on the program identifier passed in the SCTE 35 [1] Cue Message. The usage of specific data fields defined in SCTE 35 are defined in this document.

1.2. Scope

Current Traffic Systems allow Affiliates to schedule the insertion of commercial advertising in either a Time-Based or Event-Based “Window” format. Both Time-Based and Event-Based reservations are setup well in advance based on communication from the Networks as described in Section 6 (Informative).

Program-Specific Ad Insertion is the scheduling and insertion of a Spot into a specific broadcast Program in order to avoid misplacement of the Spot as in the cases of sports overruns, delays, alternate programming or other variations from a published schedule.

An overview of the specifications involved in the interaction of an end-to-end system implementing Program Specific Ad Insertion is shown in Figure 1 - System Context of this Standard, below. Additionally, Appendix B: SCTE 118 Within DPI End-To-End Representative Architecture (Informative), illustrates these components and message flows within the overall DPI context.

![Figure 1 - System Context of this Standard](image)

Additionally, this document will highlight other potential areas where Spots may air outside of Program Windows and therefore, may be of concern during a later stage of this specification.
1.3. **Benefits**

Program-Specific Ad Insertion will allow for an Avail to be associated with a specific program, as communicated by the Network. The Network assigns an Avail within a specific Program, the T&B system schedules the appropriate Spots within the Avail, and the Ad Insertion system inserts the Spot(s) associated with that Avail and Unique Program Identifier (UPID) when triggered by the appropriate Cue Message. By associating advertising to programming instead of simply to Windows, the Affiliate *should* be able to earn more revenue by guaranteeing the context of the advertisement, and by adapting to occurrences surrounding live events, such as delayed starts, early ends, or overrun. These scenarios, especially when dealing with sports programming, can involve a great deal of high value advertising. When the UPID is not found as expected, the Ad Insertion System will be able to play alternate Window-Based advertising that has been scheduled or other Program-Specific advertising if it has been scheduled.

1.4. **Intended Audience**

The intended audience is content providers, multi-channel video program distributors, TV Everywhere providers/distributors and vendors/developers who build solutions.

1.5. **Areas for Further Investigation or to be Added in Future Versions**

An implementer of SCTE 118 *may* wish to give review and attention to SCTE 224 [6], a more recent standard, that provides alternative means of identifying Avails and scheduling appropriate Spots to be inserted therein.

2. **Normative References**

The following documents contain provisions, which, through reference in this text, constitute provisions of this document. At the time of Subcommittee approval, the editions indicated were valid. All documents are subject to revision; and while parties to any agreement based on this document are encouraged to investigate the possibility of applying the most recent editions of the documents listed below, they are reminded that newer editions of those documents might not be compatible with the referenced version.

2.1. **SCTE References**


2.2. **Standards from Other Organizations**

- No normative references are applicable.

2.3. **Published Materials**

- No normative references are applicable.

3. **Informative References**

The following documents might provide valuable information to the reader but are not required when complying with this document.
3.1. SCTE References


[4] SCTE 118-2 2019 – Program-Specific Ad Insertion – Content Provider to Traffic Communication Applications Data Model

[5] SCTE 104 2017 – Automation System to Compression System Communications Applications Program Interface (API)


3.2. Standards from Other Organizations

- No informative references are applicable.

3.3. Published Materials

- No informative references are applicable.

4. Compliance Notation

<table>
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<tr>
<td>shall</td>
<td>This word or the adjective “required” means that the item is an absolute requirement of this document.</td>
</tr>
<tr>
<td>shall not</td>
<td>This phrase means that the item is an absolute prohibition of this document.</td>
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<tr>
<td>forbidden</td>
<td>This word means the value specified shall never be used.</td>
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<tr>
<td>should</td>
<td>This word or the adjective “recommended” means that there may exist valid reasons in particular circumstances to ignore this item, but the full implications should be understood and the case carefully weighted before choosing a different course.</td>
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<tr>
<td>should not</td>
<td>This phrase means that there may exist valid reasons in particular circumstances when the listed behavior is acceptable or even useful, but the full implications should be understood and the case carefully weighed before implementing any behavior described with this label.</td>
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<tr>
<td>may</td>
<td>This word or the adjective “optional” means that this item is truly optional. One vendor may choose to include the item because a particular marketplace requires it or because it enhances the product, for example; another vendor may omit the same item.</td>
</tr>
<tr>
<td>deprecated</td>
<td>Use is permissible for legacy purposes only. Deprecated features may be removed from future versions of this document. Implementations should avoid use of deprecated features.</td>
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AMERICAN NATIONAL STANDARD © SCTE•ISBE
5. Abbreviations and Definitions

5.1. Abbreviations

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<th>Definition</th>
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<td>BXF</td>
<td>Broadcast eXchange Format standard as defined in SMPTE 2021[3]</td>
</tr>
<tr>
<td>DPI</td>
<td>digital program insertion</td>
</tr>
<tr>
<td>ISAN</td>
<td>International Standard Audio/Visual Number [6], a globally-unique identifier used for referencing a specific version of a completed audio/visual work as well as its finished components.</td>
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<tr>
<td>MVPD</td>
<td>multichannel video programming distributor</td>
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<tr>
<td>SCTE</td>
<td>Society of Cable Telecommunications Engineers</td>
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<tr>
<td>SMPTE</td>
<td>Society of Motion Picture and Television Engineers</td>
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<tr>
<td>UPID</td>
<td>unique_program_id</td>
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<tr>
<td>URI</td>
<td>Uniform Resource Identifier</td>
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<tr>
<td>XML</td>
<td>eXtensible Markup Language</td>
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5.2 Definitions

Definitions of terms used in this document are provided in this section. Defined terms that have specific meanings are capitalized. When the capitalized term is used in this document, the term has the specific meaning as defined in this section.

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<tr>
<th>Definition</th>
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<tr>
<td>Ad Insertion System</td>
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<tr>
<td>Advertisement (also called “Ad”)</td>
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<tr>
<td>Affiliate</td>
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<tr>
<td>Avail (Availability)</td>
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<tr>
<td>avail_num</td>
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<td>avails_expected</td>
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<tr>
<td>Break</td>
</tr>
<tr>
<td>Broadcast Day</td>
</tr>
<tr>
<td>Term</td>
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<td>-------------------------------</td>
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<tr>
<td>Calendar Day</td>
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<td>Cue Message</td>
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<td>Enhanced File</td>
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<td>Event-Based Format</td>
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<td>Network</td>
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<td>Program</td>
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<tr>
<td>Schedule File</td>
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<td>Server (also, Ad Server)</td>
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<td>Service Level Agreement</td>
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<td>Simple File</td>
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<tr>
<td>Slot</td>
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<td>Splicer</td>
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<td>Spot</td>
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<td>Tier</td>
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<td>Time-Based Format</td>
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<td>Traffic System (also, commonly “traffic and billing system” or “T&amp;B system”)</td>
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<tr>
<td>Unique</td>
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<tr>
<td>unique_program_id</td>
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<td>-------------------</td>
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<tr>
<td>Unique Program Identifier</td>
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<td>Verification File</td>
</tr>
<tr>
<td>Window</td>
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<tr>
<td>Valid Window</td>
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<tr>
<td>Window-Based</td>
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<td>Zone</td>
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### 6. System Overview (Informative)

This document describes the systems encompassing Program-Specific Ad Insertion and their interaction. Without Program-Specific Ads Insertion, there are two in typical and general types of advertising insertion into Network programming. These Window-Based Avails are either Time-Based or Event-Based advertising insertion as described in the two following scenarios.

A Time-Based Format assigns each break an exact time that a Cue Message is expected and then allows for a buffer around it. Figure 2 shows that the break “red dot” is set for 3:40 and the Window is set for a 5-minute buffer around it for a 10-minute total Window. If the Cue Message is not received within that 10-minute Window, the Avail will be lost. Time-Based Formats are used on Networks with reliable Cue Message delivery patterns, e.g. Discovery, MTV or Food Networks.

![Figure 2 – Time-based Diagram](image)

Event-Based Formats are defined by setting up a Window time and assigning multiple Avails that float within that Window. Figure 3 shows a one-hour Window from 7:30 PM to 8:30 PM with 3 Avails assigned to it. The cues for these Avails may be received at any time within the one-hour Window. If only two cues are received within the Window, the 3rd Avail will be lost. Because Event-Based Formats allow breaks to air sequentially at any time within a Window, they are most often used when cue times are unpredictable, e.g. live sporting events.
6.1. Scenarios Addressed by Program-Specific Ad Insertion

The following is a non-comprehensive list of scenarios that *may* be better addressed by Program-Specific Ad Insertion than by traditional, Window-Based insertion. Many of these cases deal with high-value advertising Avails. The ability to better utilize inventory and sell these high-value Avails gives the possibility of additional revenue to the Affiliate.

- Sporting Event Over runs
  - NFL, MLB, etc. games running long – with no additional breaks
  - NFL, MLB, etc. games going into overtime, with additional breaks being offered for local use
- Specials / Live non-sports events running long
  - MTV Music Awards running 4 hours rather than expected 3
- Sporting Event Short-runs
  - NFL, MLB, etc. games ending sooner than expected – with no loss of breaks
- Breaking news events interrupting scheduled programming
  - Programming/breaks ceased due to weather alert / war coverage / national news story
- Sporting Event Rain-outs and Blackouts
  - Sporting Event does not air at all, due to “rain-out situation”
  - Sporting event begins late, due to rain delay
  - Sporting event ends early, due to rain-out
  - Sporting event airs for a portion of time – then becomes “delayed” – only to later resume

6.2. Implementation of Program-Specific Ad Insertion

Implementation of Program-Specific Ad Insertion requires the synchronization and communication of program identifiers from a Network through the Affiliate’s Traffic System to the Affiliate’s Ad Insertion System.

Today, there currently exist a number of communication paths between Networks and Affiliates. There also exist numerous formats for communicating schedules from Traffic Systems to Ad Insertion Systems. In order for Program-Specific and Traditional Ad Insertion to work, there needs to be a standardization of communication between the parties involved in this process. These communications means are described in the documents listed in Section 3.1 and outlined briefly, below.

The first of these standards (SCTE 118-2[4]) defines the communication of a Network’s broadcast schedule, with the appropriate Unique Program Identifiers to the Affiliate. This communication *should* simply contain this UPID in addition to the data that is already being supplied from the Broadcaster to the Traffic System.
The second standard (SCTE 118-3[3]) defines the communication of a schedule to an Ad Insertion System from an Affiliate’s Traffic System and the verifications from the Ad Insertion System to the Affiliate’s Traffic System. This is historically done through a flat-file schedule file that defines play Windows and what Spot is supposed to play, and a flat-file Verification File reporting what played or failed based on the original schedule file. In order to accommodate Program-Specific Ad Insertion, the Traffic System will need to be able to schedule and verify both Window-Based and Program-based schedules. Many Traffic and Ad Insertion systems already have a common format for communicating the Window-Based insertions. The Program-based insertions will be communicated in compliance with SCTE 118-3 or SCTE 118-2 to include the additional data for Program-Specific Ad Insertion.

This document and the other two standards do not intend to break the way in which current systems create and process schedules. They are meant to enhance the capabilities of Traffic and Ad Insertion Systems, to provide for additional revenue for Affiliates through the better targeting of advertisements.

Program-Specific Ad Insertion will always occur based on a SCTE 35[1] Cue Message that contains a non-zero UPID. When scheduling a Program-Specific Avail, the whole Avail must have the same attributes, and must be entirely Program-Specific.

### 6.3. A Multi-Tiered Approach to Program-Specific Ad Insertion

To allow for a phased approach to the implementation of Program-Specific Ad Insertion through the various components, the definition of multiple tiers of support is defined in this Standard. In this manner, various devices can produce and support data supporting Tier 0, Tier 1 or Tier 2 Programs or events. When a Network, Traffic System or Ad Insertion System supports a particular Tier, all Programs or events scheduled or announced do not need to be of that Tier (although a Program must maintain a consistent tier for all of its Avails). A schedule file may contain events that are a mixture of Tiers, and a Network need only support Tier 2 or Tier 1 data for a subset of their Cue Messages.

The following rules are meant to override the defined behavior in Sections 8.1.3 and 8.2, which describe the behavior of a Tier 2 system (full implementation).

If all devices in a particular installation do not support a Tier of service, then that system cannot be compliant. That is, if there is a system producing Tier 2 messages in the content, a system that is producing Tier 2 schedule files at the affiliate, but only a Tier 1 Ad Insertion System, then the overall system is essentially a Tier 1 system.

In addition to complying with requirements for a Tier from the system standpoint, the data must also be compliant that same Tier. If a Traffic System receives only Tier 0 or Tier 1 schedule data from a Network (i.e., it only receives a list of Programs with the number of breaks, or a list of Programs with unique_program_ids and number of breaks), it cannot, without additional data, produce a Tier 2 schedule file (one that specifically states what avail_num and avail_num values will be contained within each Cue Message).

### 6.4. Additional Notes about using Program-Specific Insertion

SCTE 35[1] allows for a Unique Program Identifier of 16 bits to be conveyed in the splice_schedule() and splice_insert() commands as defined in SCTE 35. The value of zero is reserved to signal an un-specified Unique Program Identifier by the Network.
When using a primary Program-Specific and alternate schedule the Avails in each schedule are tracked differently. For example, if the last Program ID avail_num was greater than 1 and no other Spots have played in the alternate schedule Window then the first Avail in the alternate schedule Window will play.

In the circumstances where there are multiple feeds for a given Network (for example, USA Network’s East Coast vs. West Coast), each feed will have its own Unique broadcast day, and be scheduled as if they were independent, Unique Networks. The fact that they are simply time-shifted versions of each other has no bearing on implementing this standard.

6.5. **Not described in this document are:**

- The communication of the Unique Program Identifier from a Broadcaster to an Affiliate’s Traffic System. (Refer to SCTE 118-2[4])
- The communication of the Unique Program Identifier from an Affiliate’s Traffic System to an Ad Insertion System. (Refer to SCTE 118-3[3])

This document does not intend to:

- Change the method of communication between Traffic System and Ad Insertion System
- Create real-time communications between the Traffic System and Ad Insertion System
- Address any issues of backhaul communication between the Ad Insertion System and the Traffic System other than through the currently existing verification process
- Require the use of the splice_schedule() message.

7. **Program-Specific Data Fields**

7.1. **Lifespan of a Unique Program Identifier**

A Unique Program Identifier **shall** be valid and reserved for the 24-hour period (Program Window) defined with the Scheduled Program Date and Time (see SCTE 118-2[4]) in the middle of the valid Unique Program Identifier Window. As a result, a Unique Program Identifier cannot be used (or reserved) for a different event (even a duplicate instance of the same Program) for 12 hours, 00 minutes, and 00 seconds before the scheduled beginning of the Program, and cannot be repeated for 11 hours, 59 minutes, and 59 seconds after the end of the Program, as shown in Figure 4. Note: this allows for the actual airing of the Program to occur early (by up to 12 hours) or late (up to 11 hours, 59 minutes, and 59 seconds minus the Program duration).

Two Programs can be scheduled on subsequent days at the same time using the same Unique Program Identifier, as the Schedule Program Date and Time plus the Program Window of the first Program do not overlap with the Schedule Program Date and Time minus the Program Window of the subsequent day’s Program (except during daylight savings situations, when either an unscheduled hour of programming occurs, or when the second day’s schedule overwrites the first day’s for the overlapping hour). This 24-hour separation **shall** be the effective minimum separation of Unique Program Identifier reuse.
7.2. Lifespan and Sequence of Avails

During the lifespan of a Unique Program Identifier, Ad Insertion Systems and Splicers should be tolerant of Cue Messages that are missed or are received out of sequence. Although a Network is generally expected to increment the avail_num field for subsequent breaks within a given Program, an Ad Insertion System should handle the case if Avails arrive in non-sequential order (i.e., if the Avail with an avail_num value of 1 plays, then the Avail with the avail_num value of 3 plays, then the Avail with an avail_num value of 2 may still play when the appropriate Cue Message is received within the appropriate Program Window).

Reuse of non-zero Avail numbers within a Program is not recommended, as it would not unambiguously identify two Avails with the same attributes within the same Program.

Duplicate Cue Messages shall be ignored, and the Cue Message details will be recorded in the Verification File as a missed Avail.

Avails will continue to live until their Windows expire (as described in this document and SCTE 118-3[3]), and an Ad Insertion System should insert the appropriate Spots if it sees a ‘skipped’ avail_num at a later time. Program-Specific Avails that have not been played do not expire when a subsequent Avail is announced. Program-Specific Avails only expire when played or at the close of the Avail’s scheduled Window.

All occurrences of a Unique Program Identifier do not need to be sequential and uninterrupted.

For example, if a Program contains four Avails, the Cue Messages for the first two Avails could be received, and then a Cue Message containing a completely different (or unspecified) Unique Program Identifier could be received. Finally, the third and fourth Avails for the original Program could be received. This situation may be encountered in a baseball rain delay, or if a Network and affiliate wished to announce a half-time show as a different event than the game in which it resides.

As another example, an Ad Insertion System should be able to determine that Cue Message with avail_num value of 2 has been received and not the expected avail_num value of 1 and should play the appropriately scheduled Spot. At a later point in time (during the Avail’s valid Window), avail_num value of 1 is encountered, and the appropriately scheduled Spot is played. The Ad Insertion system will play avail_num value of 1 for the appropriate Unique Program Identifier even if Cue Messages for other Programs have occurred in between.

8. Tiers Of Data And System Operation

To allow for a phased approach to the implementation of Program-Specific Ad Insertion through the various components, multiple Tiers of operation are defined. When a Network, Traffic System or Ad Insertion System supports a particular Tier, all Programs or events scheduled or announced do not need to be compliant with that Tier (although a Program must maintain a consistent Tier for all of its Avails). A
schedule file may contain events that are a mixture of Tiers, and a Network need only support Tier 2 or Tier 1 data for a subset of their Cue Messages.

Note: the use of the SCTE 35[1] splice_schedule() command is not required to implement Tiers or any other specification of this document.

For a system or party (Network, affiliate, etc.) to provide a service Tier, the system or party shall support ingesting or producing that defined level of data and must produce the appropriate responses.

A Network shall produce Tier ‘x’ schedules and corresponding Tier ‘x’ Cue Messages for an affiliate in order to provide Tier ‘x’ service to that affiliate for an event. A Network may produce a schedule that contains events of different Tiers to a single affiliate. A Network may provide different service Tiers to different affiliates by providing schedule files with differing data to various affiliates.

An Ad Insertion System supporting a particular Tier shall accept schedule files that may contain a mix of events that are of the supported Tier or below. That is, if it supports Tier 1 insertion, it must be able to accept schedule files that contain both Tier 0 and Tier 1 scheduled items. It shall produce a Verification File with the appropriate information for each event of the schedule file (Tier 2 verifications for Tier 2 events, Tier 1 verifications for Tier 1 events, etc.).

A Traffic System shall be able to ingest Tier ‘x’ schedule data for a Network from a Content Provider and Tier ‘x’ Verification Files from an Ad Insertion system and shall be able to generate Tier ‘x’ schedules to an Ad Insertion system in order to provide Tier ‘x’ service.

8.1. Definition of Tiers

8.1.1. Tier 0

Tier 0 shall describe the functionality of a system that implements SCTE 35[1] Cue Messages without utilizing (or placing) data in the unique_program_id, avail_num and avails_expected field. This describes how all systems behave prior to the implementation of this Standard and related technologies. Tier 0 also describes the default behavior that will occur if no match can be made when utilizing Tier 1 or Tier 2 data and instructions.

8.1.2. Tier 1

Tier 1 shall describe the functionality of a system where only unique_program_id must match.

Note: This behavior enables the scheduling of Avails within a specified Program but does not enable knowledge of which Avail has been announced.

- For a system creating SCTE 35[1] Cue Messages, Tier 1 support should create a message with a valid unique_program_id, and both the avail_num and avails_expected fields should be set to zero (but either or both may be non-zero).
- A Traffic System supporting Tier 1 shall create schedule files with a valid unique_program_id, and both the avail_num and avails_expected fields shall be set to zero.
- An Ad Insertion System supporting Tier 1 shall match an Avail on a valid Window and unique_program_id. If the avail_num field or avails_expected field are populated in either the Cue Message or the schedule file, they shall be ignored.
8.1.3. Tier 2

Tier 2 shall describe the functionality of a system where unique_program_id, avail_num and avails_expected all must all match.

Note: If a system encounters data that does not contain all of the required Tier 2 information (e.g., an Ad Insertion System receives a Cue Message with a valid unique_program_id but an avail_num or avails_expected of 0, or a schedule file with a valid unique_program_id but an avail_num or avail_expected of 0), it will switch to implementing Tier 1 behavior. If all of the fields (unique_program_id, avail_num and avails_expected) are populated with valid (non-zero) values, but no match is made, then it will switch to implementing Tier 0 behavior for the Spot in question.

8.2. Behavior of an Ad Insertion System Implementing Program-Specific Ad Insertion

Ad Insertion Systems shall have standard behavior when supporting Program-Specific Ad Insertion at Tier 2. This behavior is defined by the following rules (processed sequentially):

1. An Ad Insertion System, upon receiving a SCTE 35[1] Cue Message containing a non-zero unique_program_id, avail_num and avails_expected within a valid Window, will insert the matching Avail’s Spot(s). In order to match, the values of all three fields must match (unless the Ad Insertion System is using a Tier 1 schedule for the unique_program_id, then it will ignore the avail_num and avails_expected fields) and must be within a valid Window. If no match is found, then no Program-Specific Ad Insertion will occur.
2. If no Program-Specific Ad Insertion occurs due to a zero unique_program_id or due to no match in rule 1, the Ad Insertion System will play a Window-Based insertion if the Cue Message falls within a valid, scheduled Window.
3. If an Ad Insertion System has no match (either Program Specific as in rule 1 or Window-Based as in rule 2), no insertion will occur, and the Cue Message details (time, length, unique_program_id, avail_num, avails_expected) should be recorded to the Verification File as a missed Avail.

The Ad Insertion System shall also generate Verification Files that log which Spots ran or failed, at what time, and against what UPID. Note: The Traffic System then interprets the Verification File for billing, future scheduling, makegoods, etc.

If multiple schedule files are being merged to produce the final schedule file for an Ad Insertion System, both schedule files pre-merge must have Program-Specific scheduling information for a particular break if both are going to contribute Spots to the break. If neither system provides Program-Specific scheduling information, a Program-Specific schedule cannot be generated for the Avail.
Appendix A: Usage Example (Informative)

The following is a real-life scenario that happened or could have happened on 5/22/2004.

Please refer to Figure 5 (“Overtime with Extra Break - Today”)

The first drawing titled Today’s Window-Based Example is a baseline drawing that graphically depicts the way ESPN would currently be scheduled on the night of May 22, 2004.

The first section (‘Scheduled’) shows how users actually scheduled ESPN with implementations prior to the adoption of this Standard. A user would have combined the basketball game and Sports Center (SC) to create one 4 hour Window with 9 Avails. The remainder of that night’s schedule had three 1 hour Windows with the appropriate number of Avails for each expected Program.

The second (‘Actual’) shows how the Avails fell and a timeline version of the “as-ran” log. The user caught the O/T Avail but only aired a normal SC dollar Spot and not a higher dollar one specifically meant for the basketball game.

Please refer to Figure 6 (“Overtime with Extra Break”)

In the second drawing illustrates the same evening but demonstrates how a Program-Specific event might work if the user were to expect “live programming”, Tier 2, queue messages from the Network for the basketball game and the Sports Center Program.

The primary schedule (‘Scheduled - Primary’) shows 5 Avails in the 2 ½ hour game and 4 Avails in the 90-minute SC Program. The user added 2 contingent (back-up O/T breaks) Avails to the schedule and assigned them to the game’s UPID (07224). The Affiliate decided that the remainder of the night (after 9PM) would not be defined as sellable by Program title so the rest of that night’s schedule has three 1-hour Windows with the appropriate number of Avails for each expected Program.

To account for the unforeseen event that the queue messages might be missing an exact match UPID or contained no UPID at all, a “safety net” alternate schedule is also produced (‘Scheduled – Alternate’). In this example the alternate schedule is Window-Based and could be another live programming schedule.

The combination of the primary schedule and the alternate schedule will yield a new hybrid combined (merged) schedule. This combined schedule will conform to the SCTE 118-3[3] format, which is backward compatible with existing formats (i.e. all the fields in the existing format are required in SCTE 118-3). The reader should notice that the primary schedule only has two sellable Programs defined. These two Programs serve as the dominant schedule while the overlapping secondary schedule acts as a fall back schedule within the combined schedule during the same time frame.

The ‘Actual’ timeline shows how the user expected the playback to happen if the user were to receive the Program-Specific Cue Messages as expected. The user maximized revenue by taking advantage of the extra Basketball O/T Avail, airing the higher value Spots in the Program based back-up break and sacrificing a lesser Avail(s) later in the evening.
**Overtime With Extra Break - Today**

- Game ends late - extra cue message
- SportsCenter 1 starts late
- Baseball Tonight starts late
- SportsCenter 2 starts late
- SportsCenter 3 starts late, ends after midnight

Today's Window Based Example

**SCHEDULED**

Window-based Avails Only

**ACTUAL**

Window-based Avails Only

Extra cue message (slot scheduled in SportsCenter #1)

- Missed SportsCenter 3 slot (only 2 cue messages sent 11p - 12a)

![Diagram comparing scheduled and actual times for Overtime with Extra Break]

**Figure 5 – Overtime with Extra Break - Today**
Overtime With Extra Break

- Game ends late - extra cue message with PID sent
- Baseball Tonight starts late
- SportsCenter 2 starts late
- SportsCenter 3 starts late, ends after midnight

Scenario 3

SCHEDULED

Primary Program- & Window-based Avails

Alternate Window-based Avails

ACTUAL

Combined Primary & Alternate Avails

Figure 6 – Overtime with Extra Break
Appendix B: SCTE 118 Within DPI End-To-End Representative Architecture (Informative)

Figure 7 – SCTE Interfaces for Advanced Advertising

This diagram provides a high level overview of the major entities, components, and interfaces that play a role in the SCTE Advanced Advertising ecosystem. It is intended for a technical audience familiar with cable technology but not with SCTE standards. As a graphical representation of an idealized, representative architecture, it is intentionally vague about implementation choices and lacks many details of an actual system.