



ATSC

ADVANCED TELEVISION
SYSTEMS COMMITTEE

ATSC Standard: A/331:2019 Amendment No. 2, Fix Daylight Saving

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Advanced Television Systems Committee
1776 K Street, N.W.
Washington, D.C. 20006
202-872-9160

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Revision History

Version	Date
Amendment approved	16 January 2020

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1. OVERVIEW

1.1 Definition

An Amendment is generated to document an enhancement, an addition or a deletion of functionality to previously agreed technical provisions in an existing ATSC document. Amendments shall be published as attachments to the original ATSC document. Distribution by ATSC of existing documents shall include any approved Amendments.

1.2 Scope

This document describes a set of changes to the System Time Fragment in A/331. These changes include changes to clarify that daylight saving time signaling is to be broadcast ~30 days before the transition, provides additional information on daylight saving time, and a set of typographical fixes.

1.3 Rationale for Changes

The changes described in this document are being proposed because the existing language is unclear and/or misleading with respect to how far in advance a daylight saving time transition is signaled.

1.4 Compatibility Considerations

The changes described in this document are backward-compatible relative to the currently published version of the standard to which this Amendment pertains and any previously approved Amendments for that standard. In published versions of A/331, the requirements of @dsDayOfMonth are unclear that the day of month signaled may be identifying a particular day in the following month. If there are any receivers which understand @dsDayOfMonth only with respect to the current month, that day of month will never occur in the present month, and such a receiver might not be able to plan for a future daylight saving time transition until the first of the following month.

2. CHANGE INSTRUCTIONS

Change instructions are given below in *italics*. Unless otherwise noted, inserted text, tables, and drawings are shown in **blue**; deletions of existing text are shown in ~~red~~ ~~strikeout~~, text which has moved is shown in **green** (the move destination) and ~~green~~ ~~strikeout~~ (the move source). The text “[ref]” indicates that a cross reference to a cited referenced document should be inserted.

2.1 Typographical Changes, Daylight Saving Time

To remove inconsistent capitalization, in all locations throughout A/331:

Change all instances of “Daylight Saving Time” to “daylight saving time.”

2.2 Correct Table 6.7 to 24-hour days

Section 6.4, Table 6.7 constrains the value of @dsHour to the range 0-24. There are only 24 hours in a day, so this should be 0-23.

In Section 6.4, Table 6.7, modify one row as shown:

@dsHour	0..1	unsignedByte (range 0..234)	Indicates the local hour at which the transition into or out of daylight saving time is to occur (0–234).
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2.3 Changes to System Time Fragment

In the System Time Fragment, the @dsDayOfMonth field is intended to represent the day of the month that the transition to or from daylight saving time occurs in a way that gives at least 27 days' notice. As currently written, this is unclear or confusing.

In Section 6.4, Table 6.7, modify one row as shown:

@dsDayOfMonth	0..1	unsignedByte (range 1..31)	Indicates the local day of the month (which can be in the current calendar month or the following calendar month) on which the transition into or out of daylight saving time is to occur.
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In Section 6.4, modify semantics for @dsDayOfMonth as shown:

@dsDayOfMonth – This unsigned integer value in the range 1 to 31 shall indicate, when present, that a transition into or out of Daylight Saving Time is to occur at some time during the next month's time (defined to be the number of days in the current calendar month). ~~present month, @dsDayOfMonth shall be included whenever there will be a Daylight Saving Time transition during the next month's time~~ ~~current month.~~ @dsDayOfMonth shall be set to ~~and~~ the local day of the month on which ~~it~~ such transition is to occur. ~~@dsDayOfMonth shall be included whenever there will be a Daylight Saving Time transition during the current month.~~ @dsDayOfMonth shall be omitted whenever there will not be a Daylight Saving Time transition during the next month's time ~~current month.~~ When @dsDayOfMonth is not present there is no default value.

In Section 6.4, Table 6.8, modify as shown:

Conditions	dsStatus	dsDayOfMonth	dsHour
At the beginning of the year (January) Daylight Saving Time is off.	not present ("false")	not present	not present
This is the status of the fields until:			
When T the transition into Daylight Saving Time is less than one month's time between one day less than one month away and the actual transition, at which time dsDayOfMonth takes the value day_in, and the dsHour field takes the value hour_in, and -The dsStatus attribute is not present, indicating it is not yet Daylight Saving Time. (The transition is to occur on the day_in day of the this month or the following month at hour=hour_in; for example, if the transition were on April 15 at 2 a.m., then day_in=15 and hour_in=2, so long as the current date is March 16 or later.)	not present ("false")	day_in	hour_in
This is the status of the fields until:			
After all time-zone T the Daylight Saving Time transition s-(within the span of the network) have has occurred, at which time dsStatus is present and set to "true", indicating that Daylight Saving Time is on, and a- Attributes dsDayOfMonth and dsHour are not present. (In the U.S., this transition occurs no later than 7 p.m. Pacific Time on the day day_in.)	"true"	not present	not present
This is the status of the fields until:			
When T the transition out of Daylight Saving Time is less than one month's time away between one day less than one month away and the actual transition, at which time the dsDayOfMonth field takes the value day_out, and dsHour takes the value hour_out, and -The dsStatus is present and set to "true", indicating it is still Daylight Saving Time. (The transition is to occur on the day_out day of the this month or the following month at hour=hour_out; for example, if the transition were on October 27 at 2 a.m., then day_out=27 and hour_out=2, so long as the current date is September 28 or later.)	"true"	day_out	hour_out
This is the status of the fields until:			
After all time-zones (within the span of the network) have shifted out of T the Daylight Saving Time transition, at which time dsStatus takes the value "false" (or is not present), indicating that Daylight Saving Time is off. Attributes dsDayOfMonth and dsHour are not present. (In the U.S., this transition occurs no later than 7 p.m. Pacific Time on the day day_out.)	not present ("false")	not present	not present
This finishes the cycle.			

2.4 Modification of System Time Fragment – Time After Daylight Savings Transition

In the System Time Fragment, the @currentUtcOffset and @utcLocalOffset fields, in combination with L1D signaling (see A/322), delivers the current local time to a receiver. However, these fields (and the System Time Fragment generally) do not signal what the local time *will be* after the signaled transition.

This amendment modifies the System Time Fragment by clearly describing that the @utcLocalOffset increases by one hour at the transition to daylight saving time, and decreases by one hour at the transition out of daylight saving time. Note that as of August 5, 2019, there is exactly one time zone in the world which uses a daylight saving time offset that is not exactly one hour (Lord Howe Island, Australia uses a daylight saving time offset of 30 minutes, see <https://www.lordhoweisland.info/travel-essentials/travel-tips/>).

In Section 6.4, modify semantics for @dsStatus as shown:

@dsstatus – When set to "true", shall indicate that Daylight Saving Time is in effect at the transmitter location. When set to "false", shall indicate that Daylight Saving Time is not in effect at the transmitter location. **In nearly all places, when Daylight Saving Time is in effect, the local time is one hour later than when Daylight Saving Time is not in effect. This field shall be included whenever Daylight Saving Time is in effect at the transmitter location. The default value when not present shall be "false".**

– End of Document –