ATSC Standard: A/322:2026-04 Amendment No. 1, "Bootstrap Clarification"

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11 June 2026

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Revision History

Version	Date
Amendment approved	11 June 2026

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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 defines and clarifies the required usage of the bootstrap to remove ambiguity when heterogeneous physical-layer waveforms are time-multiplexed within a single RF channel. Specifically, it prevents misinterpretation that frames carrying non-ATSC 3.0 physical-layer waveforms may omit bootstrap transmission. This amendment clarifies that each frame, regardless of the post-bootstrap physical-layer waveform type, shall begin with a bootstrap, and clarifies understanding for bootstrap usage in time-multiplexed operation with multiple signal types. This amendment is in response to New Project Proposal N-093r0, "Clarification of Bootstrap Usage with all physical layer waveforms".

1.3 Rationale for Changes

The bootstrap is a fundamental element of ATSC 3.0, providing a universal entry point regardless of the underlying physical layer waveform. Ambiguity regarding bootstrap usage for non-ATSC 3.0 physical layer waveforms may lead to implementations that cause interoperability issues. This amendment will resolve such ambiguity through explicit clarification, ensuring consistent interpretation while preserving technical integrity of existing standards.

Clear definition of bootstrap usage is essential to ensure physical layer configuration, interoperability, receiver behavior, and backward compatibility across current and future ATSC systems. This clarification will be intended to prevent divergent implementations that could fragment the receiver ecosystem, particularly when introducing non-ATSC 3.0 physical layer waveforms alongside existing ATSC 3.0 services. It also will help ensure that receivers can reliably detect, identify, and appropriately process or ignore frames employing different physical layer technologies.

1.4 Compatibility Considerations

The changes described in this document are backward-compatible to the currently published version of the standard to which this Amendment pertains and any previously approved Amendments for that standard.

2. LIST OF CHANGES

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~~. The text “[ref]” indicates that a cross reference to a cited referenced document should be inserted.

Modify Section 8.6 as follows:

8.6 Bootstrap

The bootstrap symbol construction is defined in detail in [2]. Section 9.1 establishes constraints on the payload contents of the bootstrap to represent the set of capabilities that this standard supports.

When MIMO or Layered MIMO is applied, the bootstrap symbols prefixed to a frame shall be identical between the Polarizations, while the amplitudes may differ. In each Polarization, amplitude of the bootstrap symbol should conform to that of the following Preamble symbol.

For an overall transmission compliant with [2], the end of the last Subframe shall be followed by a bootstrap as specified in [2]. Every Frame shall begin with a bootstrap, independent of the digital transmission technology employed (whether ATSC 3.0 or other digital transmission technologies). These requirements also apply where Frames alternate with OFDM signals employing other digital transmission technologies within the same RF channel. Where a bootstrap begins a signal type that is not defined by this Standard, the values of bootstrap_major_version and bootstrap_minor_version shall each differ from the corresponding values specified in Section 9.1.1.

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