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Working Draft
Revision of ATSC A/110
(Synchronization Standard for Distributed Transmission)

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THE FOLLOWING CHANGES ARE SPECIFIED:

Note that additions are shown underlined, and deletions are shown in ~~strike through~~ fonts.

The second sentence of Section 6.5.2 now reads:

"To provide a return channel for status information from the transmitters in a network, the RF watermark signal includes provision for modulation by a slow speed serial data stream inserted at each transmitter."

Change it to read:

"To provide a return channel for status information from the transmitters in a network and for other applications, the RF watermark signal includes provision for modulation by a slow speed serial data stream inserted at each transmitter."

Section 12.3 now reads:

"As described in Section 6.5.2, provision is made for ~~inclusion~~ of slow speed ~~return channel~~ data ~~in~~ the watermark signal. ~~The return channel data is formatted as a start-stop code that is modulated onto the watermark signal.~~ All modulation and signaling is synchronous with the data structure of the host 8-VSB signal."

Change it to read:

"As described in Section 6.5.2, provision is made for carriage of slow speed data by modulation of the watermark signal. All modulation and signaling is synchronous with the data structure of the host 8-VSB signal."

Section 12.3.1 now reads:

"Modulation of the RF watermark signal shall be by phase inversion of the code sequence associated with a transmitter. The phase inversions shall occur on a ~~data-field~~-by-~~data-field~~ basis."

Change it to read:

"Modulation of the RF watermark signal shall be by phase inversion of the code sequence associated with a transmitter. The phase inversions shall occur on a Kasami sequence-by-Kasami sequence basis. Each Kasami sequence shall represent one symbol of RF watermark modulation."

Section 12.3.1.1. now reads:

"~~Phase inversion modulation~~ of ~~the~~ RF watermark ~~signal~~ shall ~~occur~~ through inversion on a bit-bit basis of the output of the code sequence generator shown in Figure 12.1. A non-inverted

sequence shall represent a zero or space bit, and an inverted sequence shall represent a one or mark bit."

Change it to read:

"Symbols of RF watermark modulation shall be created through inversion on a bit-bit basis of the output of the code sequence generator shown in Figure 12.1 for the entireties of individual Kasami sequences. A non-inverted code sequence symbol shall represent a zero or space bit of the modulating data, and an inverted code sequence symbol shall represent a one or mark bit of the modulating data."

Section 12.3.1.2 now reads:

"~~Inversions shall occur for~~ complete data field~~s~~ in the host 8-VSB data structure; ~~i.e., synchronously with the preloading of the code sequence generator~~. ~~Serial~~ data stream bits thus have lengths of approximately ~~24.2~~ ms, and the resulting baud rate is about ~~41.3~~ baud."

Change it to read:

"Since the Kasami sequence repeats nearly four times per complete data field in the host 8-VSB data structure, four symbols of RF watermark modulation (corresponding to four bits of modulating data) shall be transmitted per host 8-VSB data field. RF watermark symbols and modulating data stream bits thus have lengths of approximately 6.05 ms, and the resulting baud rate is about 165.3 baud.

In coding the data to be carried by the RF watermark modulation, trade-offs are possible between data rate and robustness. For instance, symbols may be combined in pairs or in quads to gain 3 dB and 6 dB of robustness in exchange for ½ and ¼ the data rate, respectively. Other trade-offs also are possible using different coding schemes. Coding of the data carried by the RF watermark modulation is outside the scope of this standard but shall be explicitly permitted."

Delete Section 12.3.2 and subsections 12.3.2.1 and 12.3.2.2.