

In-Band Signaling Field (IBSF)

(Clause 177)

Comments 359, 469, 470, 471

Xiang He, Huawei

Current Status of IBSF

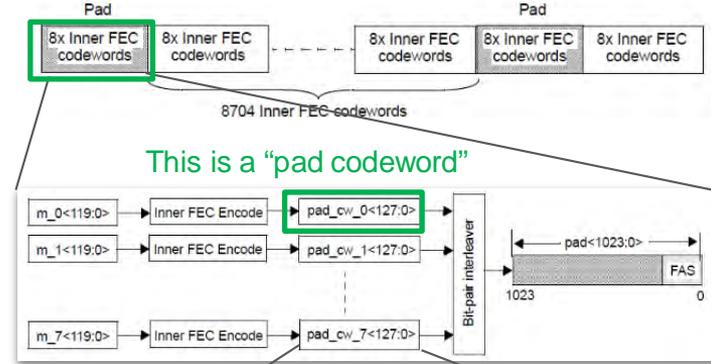
- A 1024-bit pad (8 Inner FEC codewords) is inserted periodically for each Inner FEC lane.
 - Each codeword contains a 114-bit IBSF.
- D1.0 and D1.1 left the IBSF as TBD.
 - The details of how to use this IBSF are beyond the scope of this standard.

177.4.6.2 In-band signaling field (IBSF)

The IBSF spans between the FS and parity bits within each pad codeword, as shown in Table 177–2. It may be used to carry link and signal-related information, such as receiver state, channel response, FEC statistics, etc. The details of how to use the IBSF are beyond the scope of this standard.

*Editor's note (to be removed prior to publication):
D1.0 comments requested to "Clarify in the text where the use of the IBSF will be defined."
Proposals needed.*

This is a "pad"



This is a "pad codeword"

Table 177–2—Pad format

	Frame Sequence pad_cw_f<127:122>, m_f<119:114>	In-band signaling field (IBSF) pad_cw_f<121:8>, m_f<115:0>	Parity pad_cw_f<7:0> p_f<7:0>
pad_cw_0	01 01 10	TBD	Calculated based on pad_cw_0<127:8>
pad_cw_1	01 10 10	TBD	Calculated based on pad_cw_1<127:8>
pad_cw_2	10 01 11	TBD	Calculated based on pad_cw_2<127:8>
pad_cw_3	01 00 01	TBD	Calculated based on pad_cw_3<127:8>
pad_cw_4	01 10 10	TBD	Calculated based on pad_cw_4<127:8>
pad_cw_5	01 10 01	TBD	Calculated based on pad_cw_5<127:8>
pad_cw_6	00 01 10	TBD	Calculated based on pad_cw_6<127:8>
pad_cw_7	10 10 11	TBD	Calculated based on pad_cw_7<127:8>

These are "pad bits"

Comments Received on IBSF

CI 177 SC 177.4.6.2 P 276 L 51 # 359

Ran, Adee Cisco Systems, Inc.

Comment Type **TR** Comment Status **X**

As it appears now the IBSF content is not defined at all, since it is "The details of how to use the IBSF are beyond the scope of the standard". If so, it is implementation-specific, and a compliant receiver is not required to decode it.

The words "link and signal-related information, such as receiver state, channel response, FEC statistics, etc." are a promise that cannot be fulfilled unless the content is defined.

To eliminate the TBDs in Table 177-2 it is suggested to follow a lot of precedent cases and define the IBSF content as reserved (transmitted as zeros, ignored on receipt). This can be changed in a future draft if we decide to define a meaning for these bits in the standard.

SuggestedRemedy

Change from
"It may be used to carry link and signal-related information, such as receiver state, channel response, FEC statistics, etc. The details of how to use the IBSF are beyond the scope of this standard"

to
"The assignment of the IBSF field is provided in Table 177-2".

Replace all instances of "TBD" in Table 177-2 with "Reserved" with a footnote "Transmitted as all zeros, ignored on receipt", with editorial license.

Delete the editor's note.

CI 177 SC 177.4.6.2 P 276 L 51 # 469

Brown, Matt Alphawave Semi

Comment Type **T** Comment Status **X**

The contents of the IBSF are never explicitly defined. As such, this field should be deemed to be outside the scope of this standard, at least until such time an alternate proposal is adopted.

SuggestedRemedy

Replace "It may be used to carry link and signal-related information, such as receiver state, channel response, FEC statistics, etc. The details of how to use the IBSF are beyond the scope of this standard."

With "The use and contents of the IBSF not beyond the scope of this standard."
Delete the editor's note.

CI 177 SC 177.4.6.2 P 276 L 51 # 471

Brown, Matt Alphawave Semi

Comment Type **T** Comment Status **X**

The contents of the IBSF must be sufficiently rich to prevent degradation of the transmitted signal, e.g., due to baseline wander.

Note that another comment proposes to fill the IBSF with the contents of a management control register.

SuggestedRemedy

Scramble the contents of the IBSF using an n-bit scrambler, with scrambler state retained from the previous IBSF.

The scrambler length should be at least 10 bits. A 13 bit scrambler is suggested.

CI 177 SC 177.4.6.2 P 276 L 51 # 470

Brown, Matt Alphawave Semi

Comment Type **T** Comment Status **X**

The source of content of the IBSF is not defined.

SuggestedRemedy

Define a management control variable tx_ibsf (912 bits) and along with MDIO registers. Specify the default value is all zeros.

Proposed Solution

Changes to the draft:

1. Change the term “IBSF” to “pad bits”.
2. Use the similar method that defined the pad bits in AM to define these “pad bits”:
 - The 912-bit “pad bits” in each 1024-bit pad are scrambled 0’s.
 - Use self-synchronizing PRBS13 scrambler, with any non-zero initial state.
 - Scrambler state is retained from the previous pad.

Thank you