

A decorative L-shaped graphic in the bottom-left corner, composed of multiple parallel vertical and horizontal lines in a rainbow color palette (blue, green, yellow, orange, red).

WIS Jitter Patterns



Objectives

1. Conform to PMA/PMD test requirements
2. Keep the pattern generator/checker simple
3. Avoid modifying WIS functionality as far as possible
4. Stay close (or same as) standard SONET practice
 - ✓ Re-use SONET BERT and jitter test equipment, and pre-existing work
 - ✓ **ITU-T Recommendation G.957:** OPTICAL INTERFACES FOR EQUIPMENTS AND SYSTEMS RELATING TO THE SYNCHRONOUS DIGITAL HIERARCHY
 - ✓ **ITU-T Recommendation O.181:** EQUIPMENT TO ASSESS ERROR PERFORMANCE ON STM-N INTERFACES

Opt. 1: Follow ITU G.957 App. II

(2¹¹ - 1) PRBS Generator

Reset every 4096 bits, seed =
01010101010

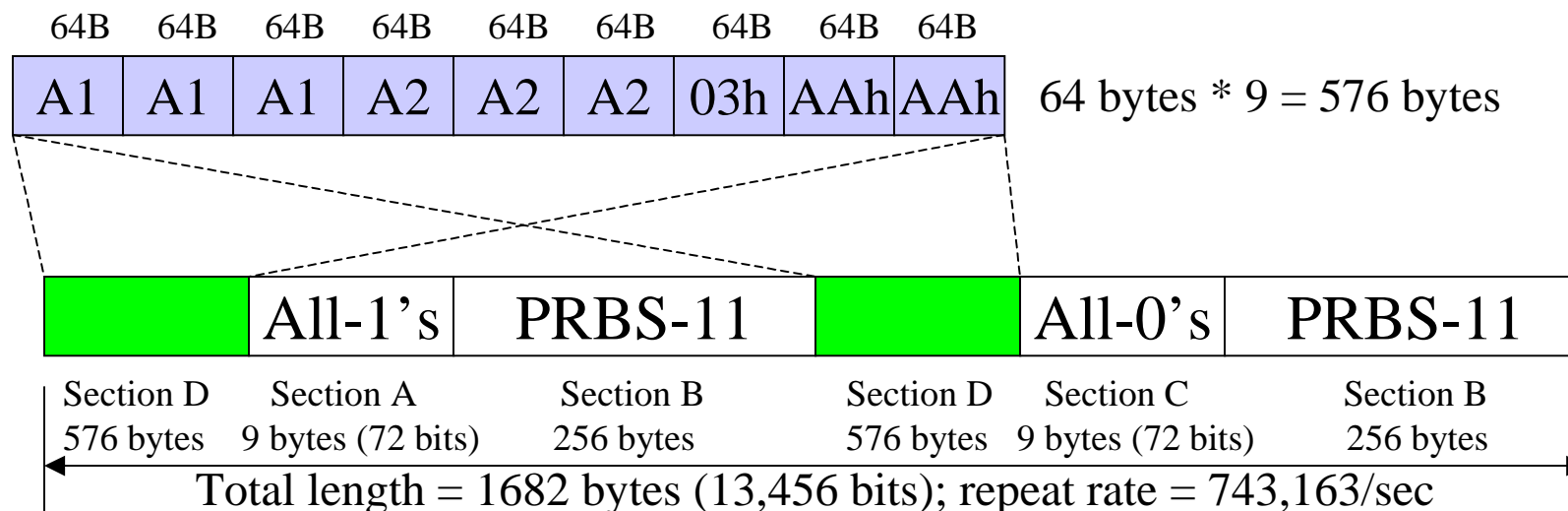
Insert strings of all-0's/all-1's

CID (Consecutive Identical Digits)

Add first line of SONET O/H

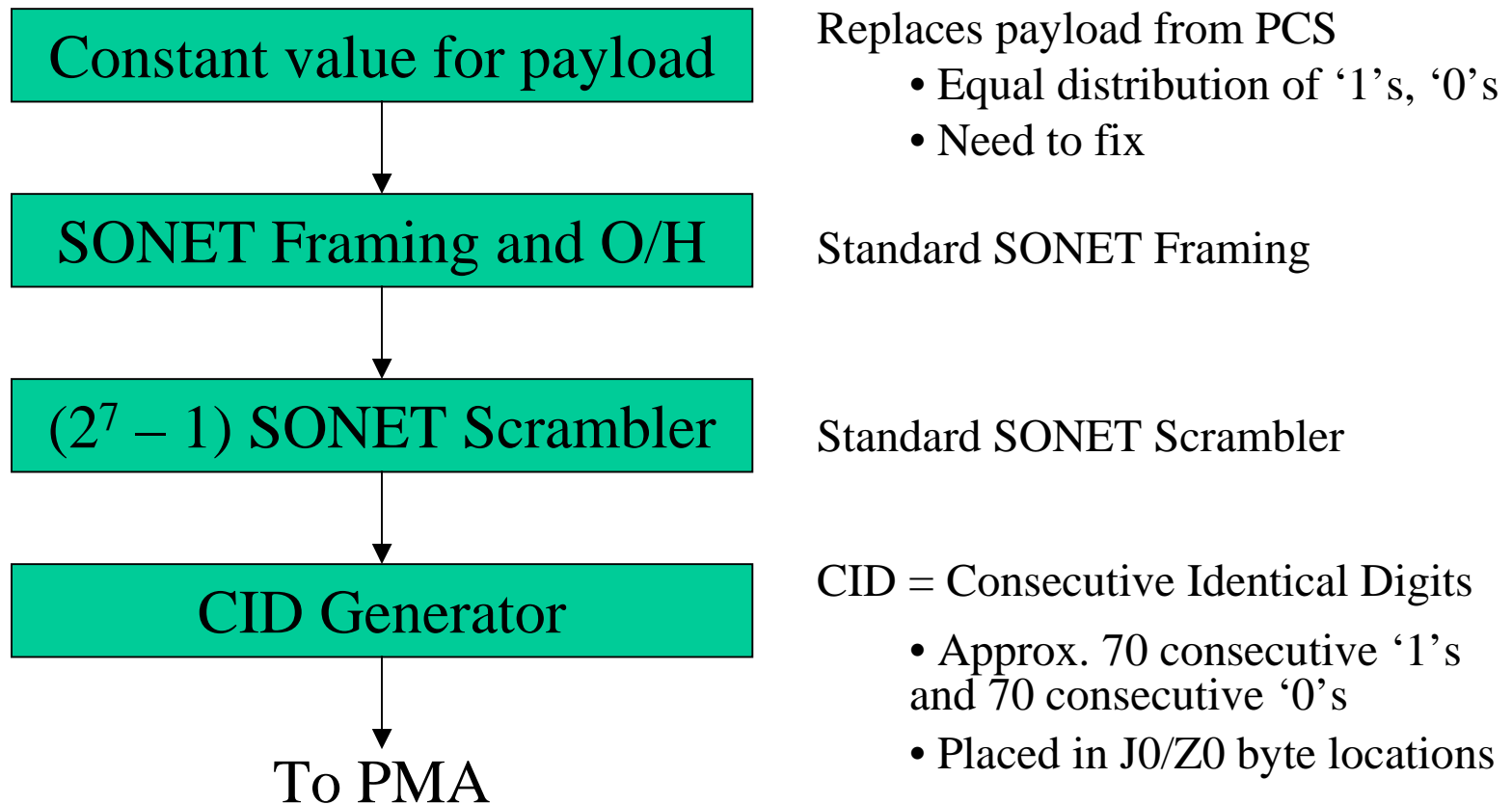
Unscrambled portion of SONET
frame

To PMA



Opt. 2: Follow ITU O.181 Annex C

(with modifications)



Total pattern length = 155520 bytes (1,244,160 bits); repeat rate = 8000/sec

Comparison of approaches

Option 1 (custom pattern)	Option 2 (re-use SONET framer)
Need extra hardware in WIS <ul style="list-style-type: none">-Separate pattern generator-Separate framer and checker	Re-use most of the WIS functionality <ul style="list-style-type: none">-Change input at PCS svc. I/F-Modify J0/Z0 bytes from framer
Completely controllable repeat rate and pattern	Fixed repeat interval (125 μ s) and pattern structure
Totally separate from WIS core functionality <ul style="list-style-type: none">- Changes don't affect WIS	Combined with WIS functions <ul style="list-style-type: none">- Test pattern changes may impact WIS

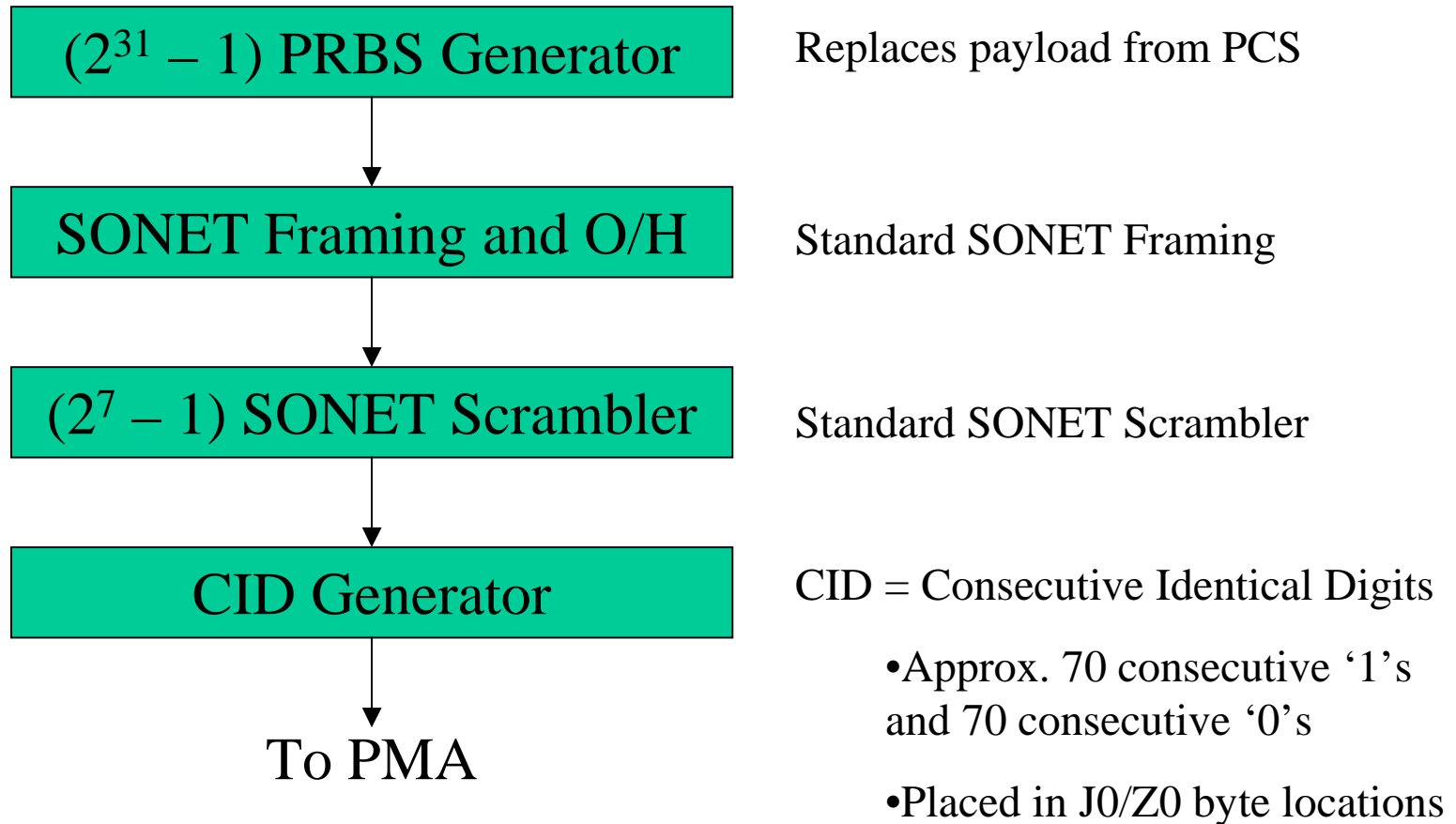


Recommendations

1. If either test pattern is acceptable to the PMA/PMD groups, then select Option 2 (re-use WIS framer to generate pattern) as it is simpler and cheaper
2. Otherwise, select Option 1
3. Add MDIO register support for whichever option is adopted

SONET BERT/Jitter Pattern

(O.181 with CID generator)



From ITU O.181, Equipment to assess error performance on STM -N interfaces
Courtesy Dan Wolaver, T1X1.3