Signalogic

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BASOP Upgrade

High Level Summary

ITU STL Q7 Meeting 2023

Background & Motivation

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- **Woefully out-of-date**
  - STL written in 1990s
  - contains global variables – not thread-safe
  - terminates entire application on error
  - not acceptable on modern server platforms with exposure to 3rd party software and local / public network connections
- **ITU GPL**
  - prohibits STL source code modification
  - makes corporate codec users very nervous
- **We have a window for upgrade**
  - EVS would be affected by an STL upgrade, but is mature and straightforward to test and confirm bit-exactness
  - IVAS has EVS dependency

Action

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- **Thread-safe Operation**
  - pass overflow flag on stack for codec codes that need overflow results
  - control with preprocessor macros (#defines)
- **Error Handling**
  - remove exit() and abort() calls
  - improve error messages – display calling STL function and all relevant parameters
  - add log-to-file option
  - add user-defined function call on error to allow application-specific behavior. For example, an application may want division-by-zero to continue with result set to maximum possible value
- **Backwards Compatibility**
  - provide full backwards compatibility
  - existing production systems can add the new STL and utilize it at their own pace

More Info

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- **ITU "OpenITU" Github Site**
  - all STL source is published at https://github.com/openitu/STL
  - two (2) current pull-requests include (i) Signalogic and (ii) Fraunhofer IIS / Ericsson (#171 and #173)
- **ITU STL GPL License**
  - prohibits any source code modification https://github.com/openitu/STL/blob/dev/LICENSE.md
- **Signalogic proposal**
  - https://github.com/signalogic/STL/blob/dev/doc/Signalogic_ITU_Non-Member_SG12_BASOPS_Upgrade.pdf