High Level Backchannel Summary BIRD 147

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Agenda

- Objectives
- Requirements
- Proposed architecture
- Incorporation of recent feedback
- Summary

Objectives

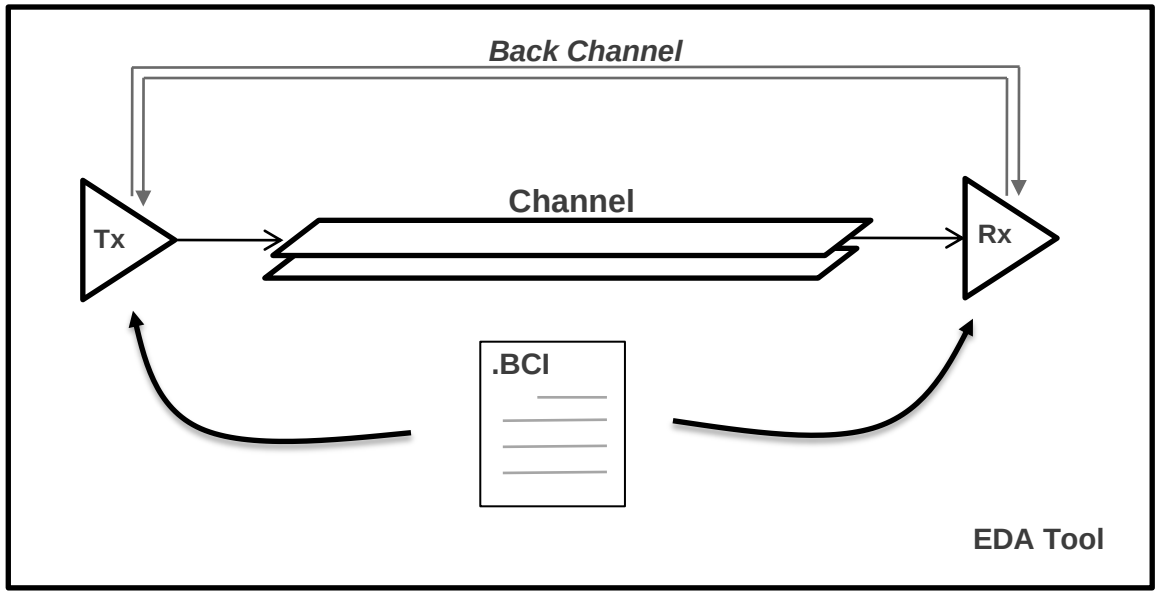
- High level:
  - Meet internal and external customer requests to enable modeling of backchannel loop between Tx and Rx for specific industry protocol standards (ex. PCI Express, 10GBASE-KR)
- More specifically:
  - Provide standard way (IBIS) for Rx to communicate desired EQ adjustments back to Tx per specific industry protocol standards
  - Enable backchannel simulation interoperability between a Tx model from supplier “A” and an Rx model from supplier “B”

Requirements

- Accurately represent the backchannel behavior (not necessarily exact functionality) of a specific industry standard protocol
- Define new syntax in a flexible manner such that backchannel functionality for standard protocols can be supported with minimal churn (i.e. new keyword additions) to the IBIS spec

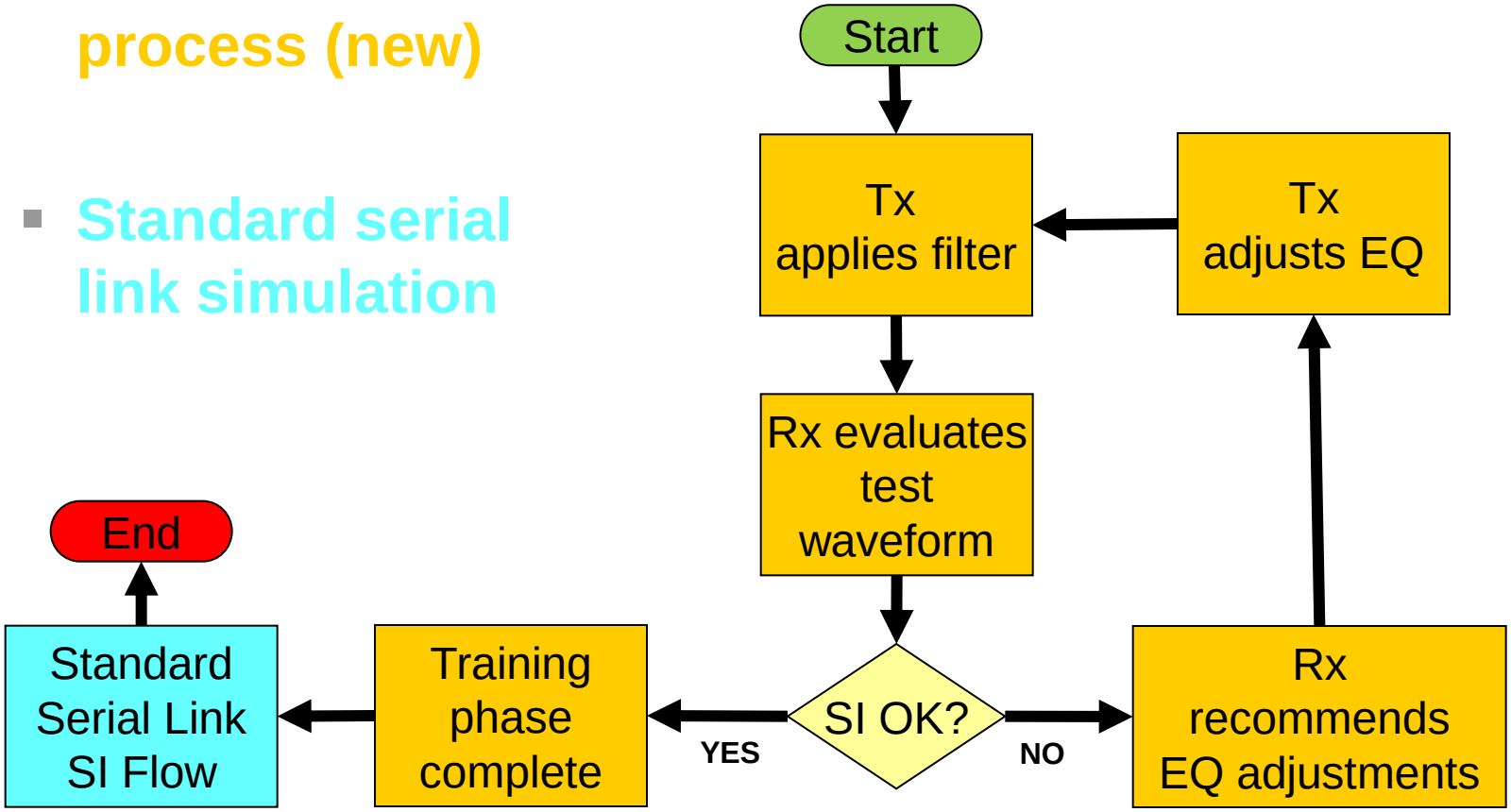
Proposed Architecture

- The EDA Tool, Tx and Rx know which protocol is being used as all of them have access to the same .BCI file.
- Once certain conditions are satisfied (**Training** points to the same mode and **Backchannel_Protocol** points to the same .BCI file) the *Back Channel* is activated by the EDA tool
- Tx and Rx exchange parameter string based on Init or Getwave mode through the *Back Channel.*
- EDA Tool terminates *Back Channel* communication once Training is Done.



Basic (Getwave mode) Backchannel Flow

- **Back-Channel process (new)**
- **Standard serial link simulation**



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Incorporation of Recent Feedback

- Support for statistical simulation recently requested (not part of original BIRD)
- Incorporated into BIRD 147

Summary

- BIRD 147 introduced on April 06 2011, officially submitted on Oct 18 2011.
- Proprietary implementation has been running and in use for several years now (proven approach), but would like to move to standard approach to enable interoperability
- Recent feedback incorporated from IBIS-ATM group
- Request from SISoft to look at backchannel in context of bigger picture Tx/Rx co-optimization, open to listening to that
- If no major conflicts identified, ready to proceed forward with vote on BIRD 147


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