

# OIF liaison report

Tom Palkert

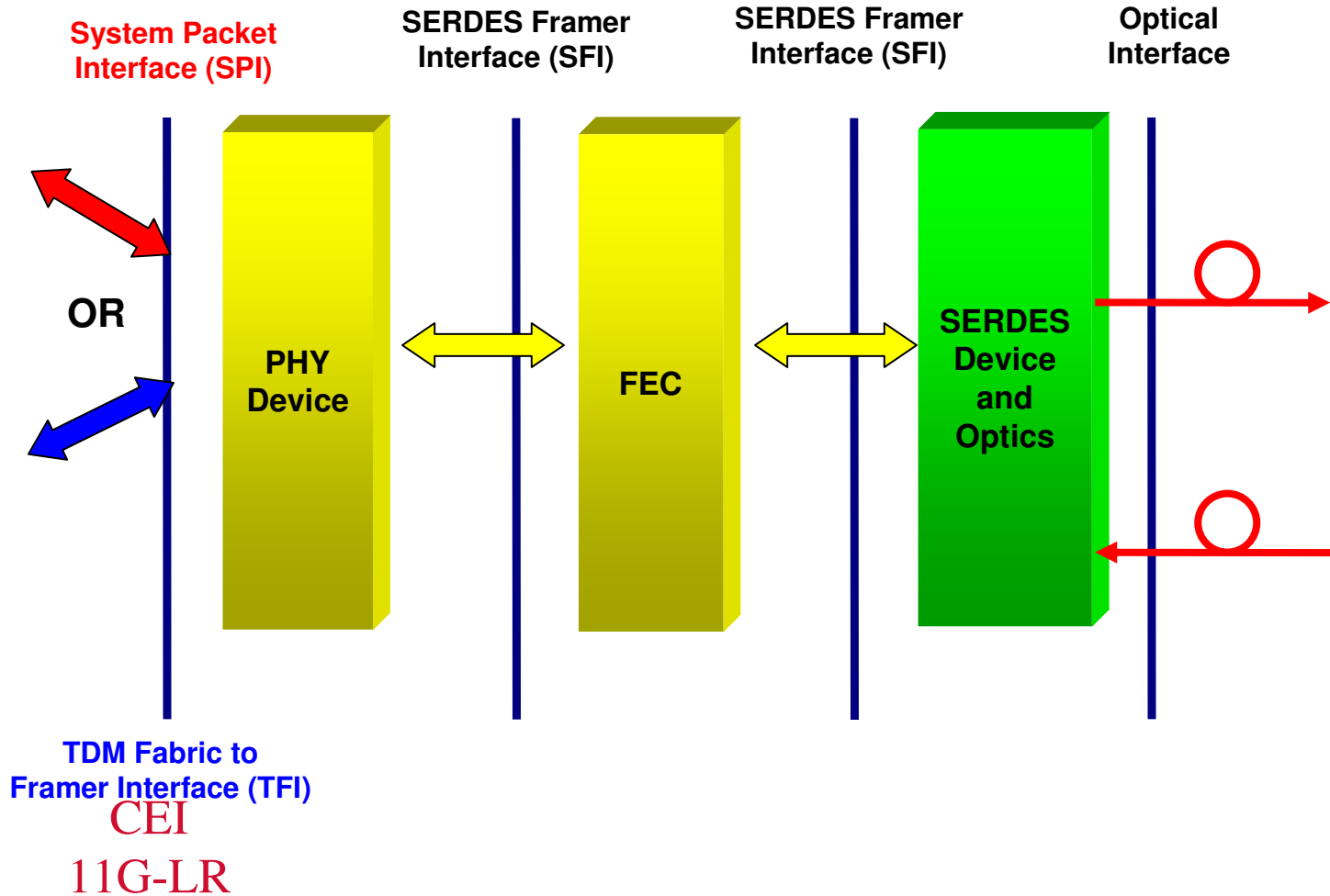
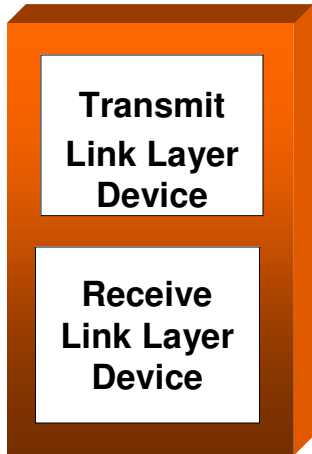
Xilinx

Sept. 2004 Ottawa

# OIF PLL (Physical Layer) activity

- Current efforts related to 802.3ap are CEI (Common Electrical Interface)
  - CEI specifies:
    - 6G (short and long reach)
    - 11G (short and long reach)
- 6G is specified for legacy applications
- 11G is specified for ‘greenfield’ applications

# CEI Universal Electrical Interface 11G-LR Industry Development



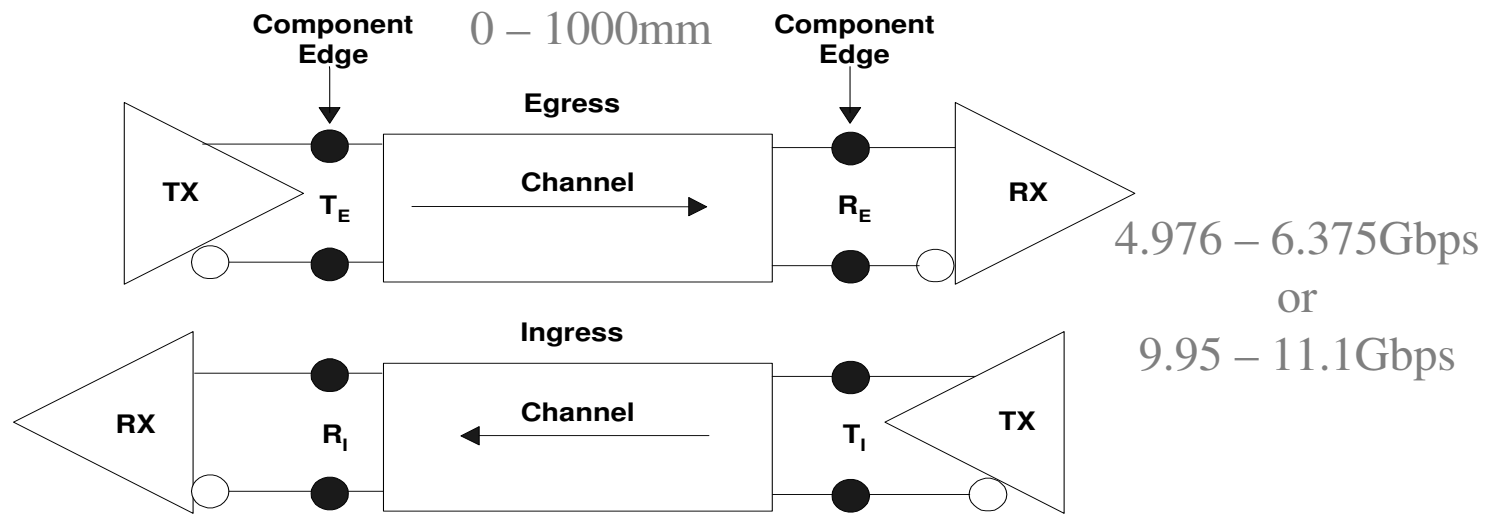
# CEI Universal Electrical Interface

## Flexibility

0 – 200mm

or

0 – 1000mm



Does specify

Data char

Compliance points

BER

Channel models

Jitter

Does not specify

Lane count

Mgt interface

supply

Connector

Pinout

Power

High level fn

# Interoperability Strategy

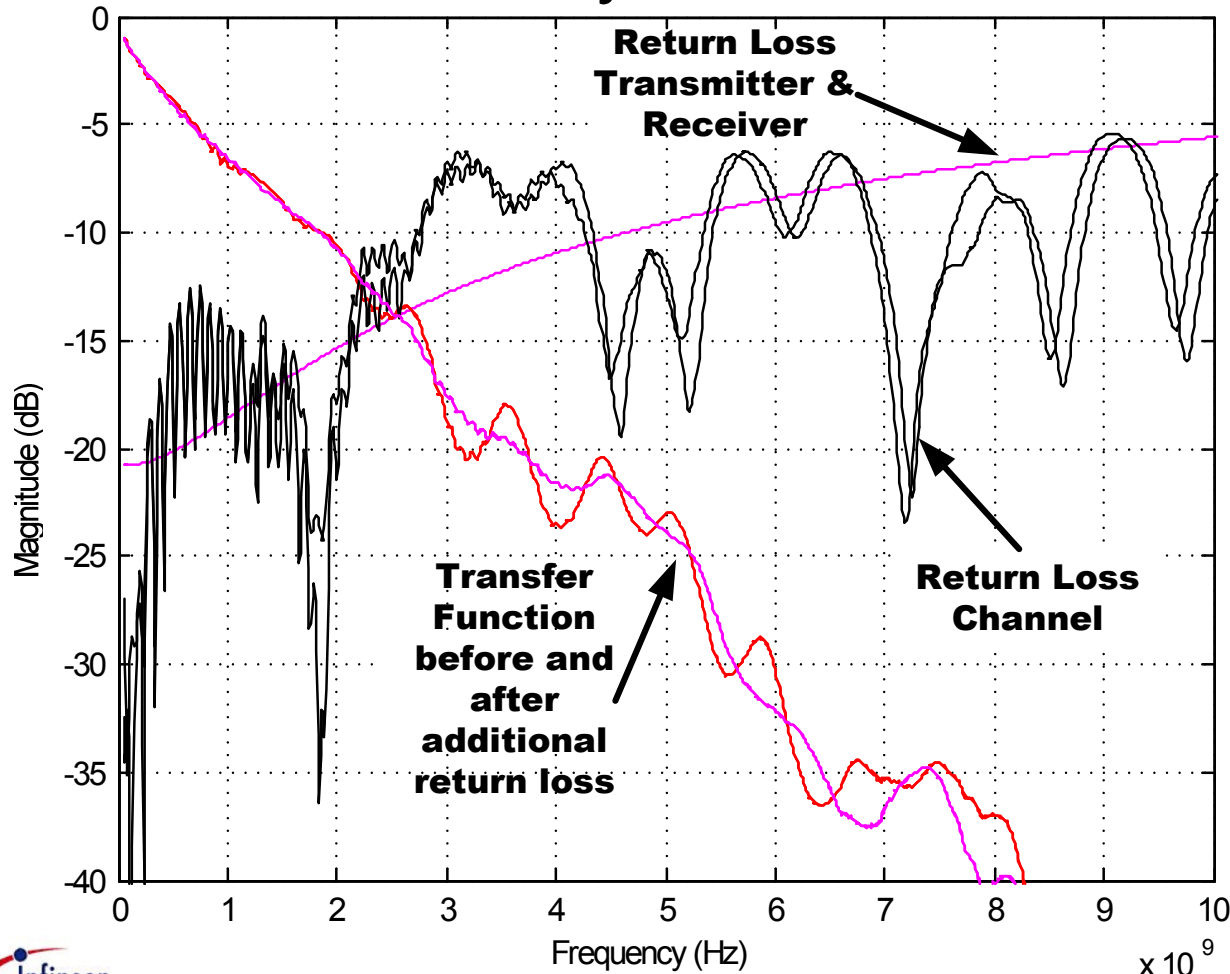
*Anthony Sanders, Infineon Technologies*

- Define exact compliancy tests for transmitter in terms of eye masks, output jitter and ability to perform emphasis
- Define compliancy test for channels using worst case transmitter and reference receiver
- Give guidelines concerning channel construction and frequency domain performance
- Receiver must be able to tolerate any combination of compliant transmitter and compliant channel thus not restricting the market in terms of developed solutions.



# Channel Interoperability Strategy

- Backplanes are measured using traditional network analysers and cascaded with a worse

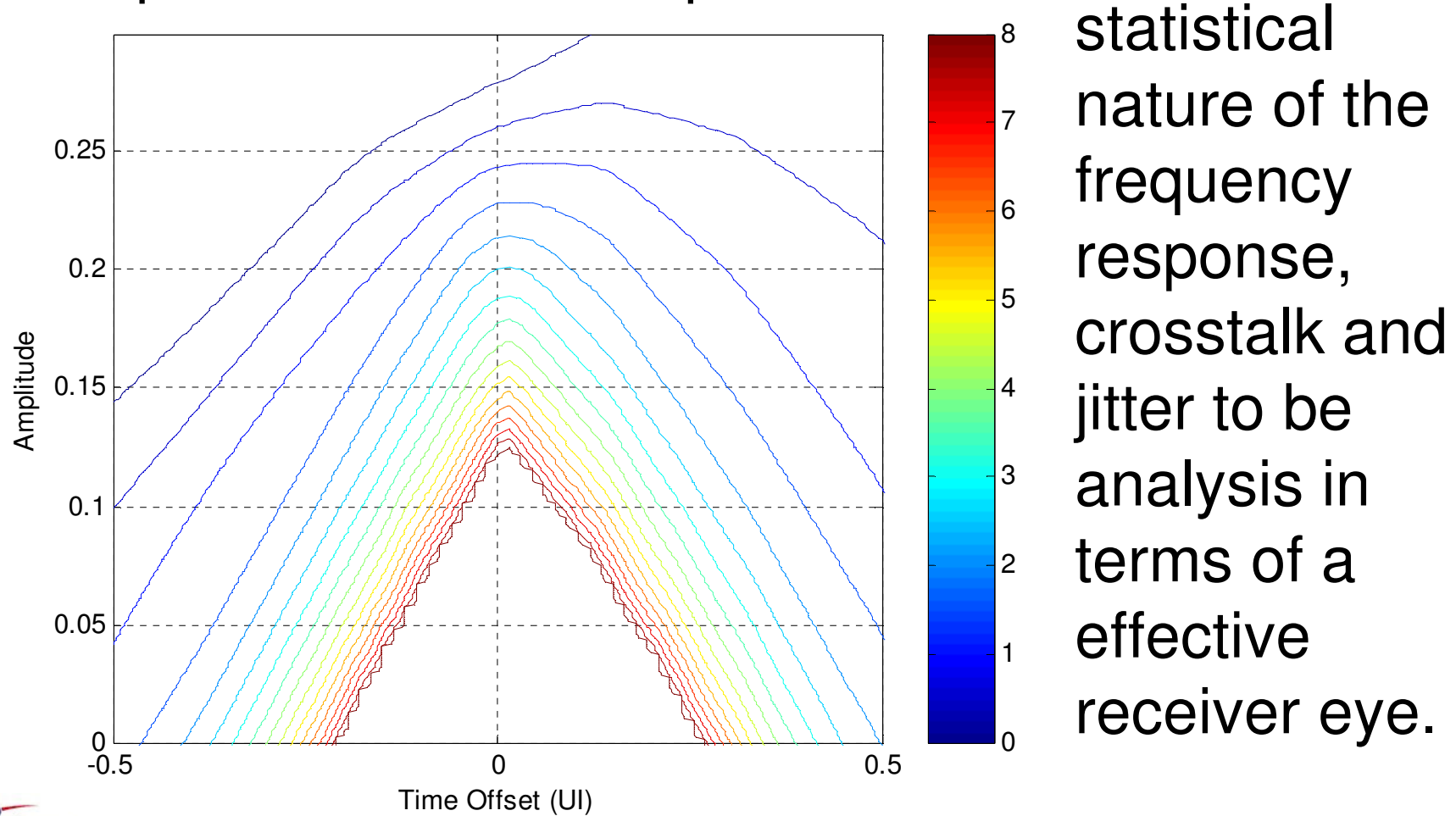


of the transmitter and receiver return loss

- The receiver pulse response is then calculated for a given transmitter pulse shape

# Channel Compliance using StatEye

- New methodology in the analysis of channel equalisation is developed which allows the exact



Results of STATEYE verification for 6G applications:

Need to specify IF Bandwidth and Launch Power for S parameter measurements in order to get good correlation.

Per Agilent,  
For the best tradeoffs between measurement throughput and dynamic range, the IF BW should be set to 300 Hz.

For Launch Power  
Accept the default nominal network analyzer test port output power, or Select the highest available LEVELED output power (anticipated that this would be in the -17 to +5 dBm range).

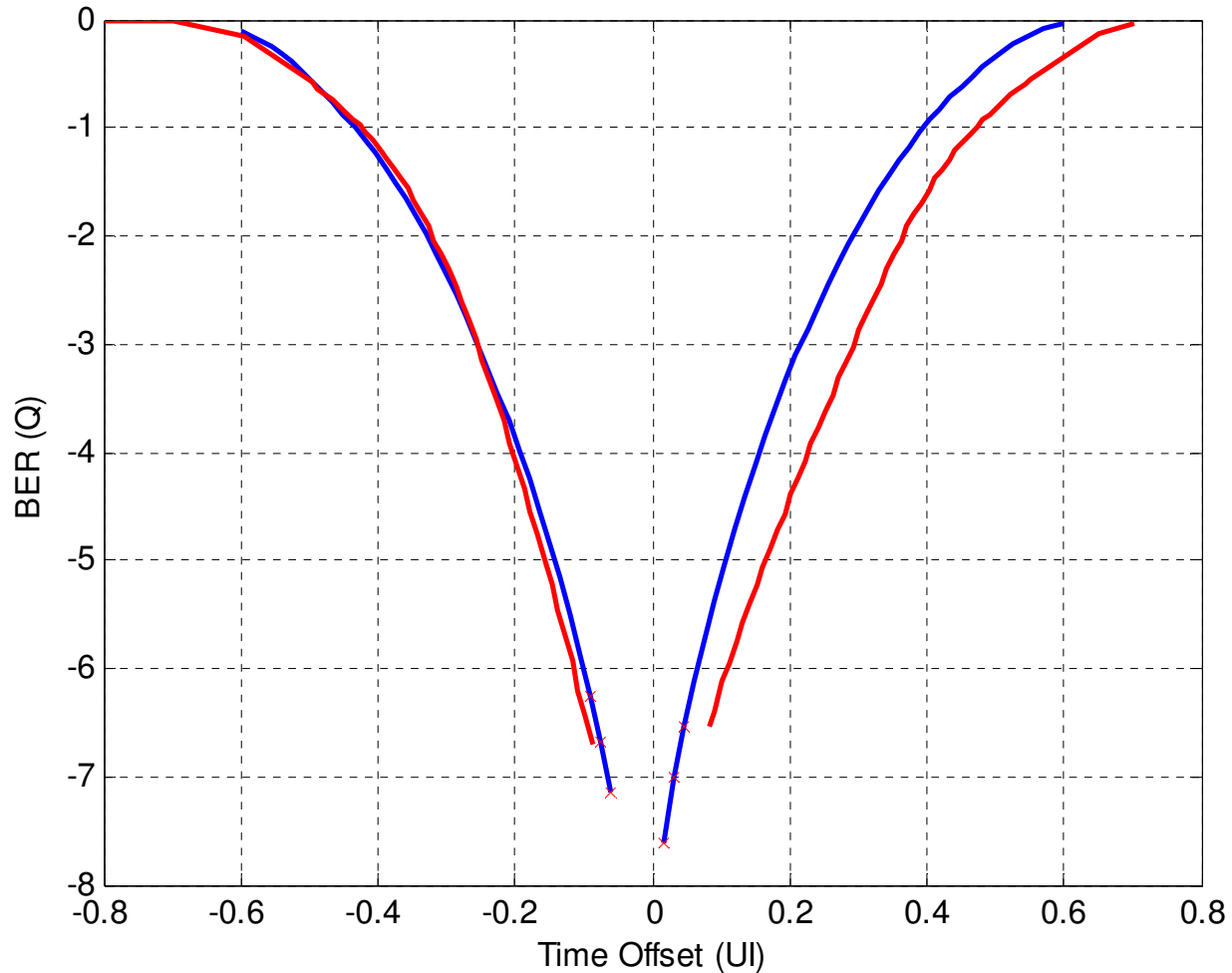
For reference on s-parameter measurements, add reference to Agilent PLTS Data Sheet # 5989-0271EN.

For reference on proper connector care, see Agilent TDR User's Guide, # 54753-97015, "The Care and Handling of Precision Connectors," Section 2.2.



# Measured vs. Simulated for Sensitivity of 50mV

Bathtub, DJ=0.47, RJ=0.031 (.\\Results\\Test\_Simple\_Tyco)



- The measured bathtub is shown in red and the Stateye in blue.
- Clearly only the left part (setup violation) of the bathtub fits .
- The right hand part of the bathtub can be explained as the „effective“ sensitivity of the BERT is not the same for setup and hold violations

# Ballot activity

- 6G SR and LR, 11G SR out for straw ballot.
- Possible 11G LR straw ballot based on results of conference call.

# OIF CEI possible work items

- Clause 8: an 11G Medium Reach (MR) NRZ binary coding channel classification with a minimum reach of ~~600mm~~ (700mm), optimized for minimum power.
  - The proposed solution uses the Long Reach TX (Pre-emphasis) with the Short Reach RX (No Eq.).