Report from TP3 Conference Calls

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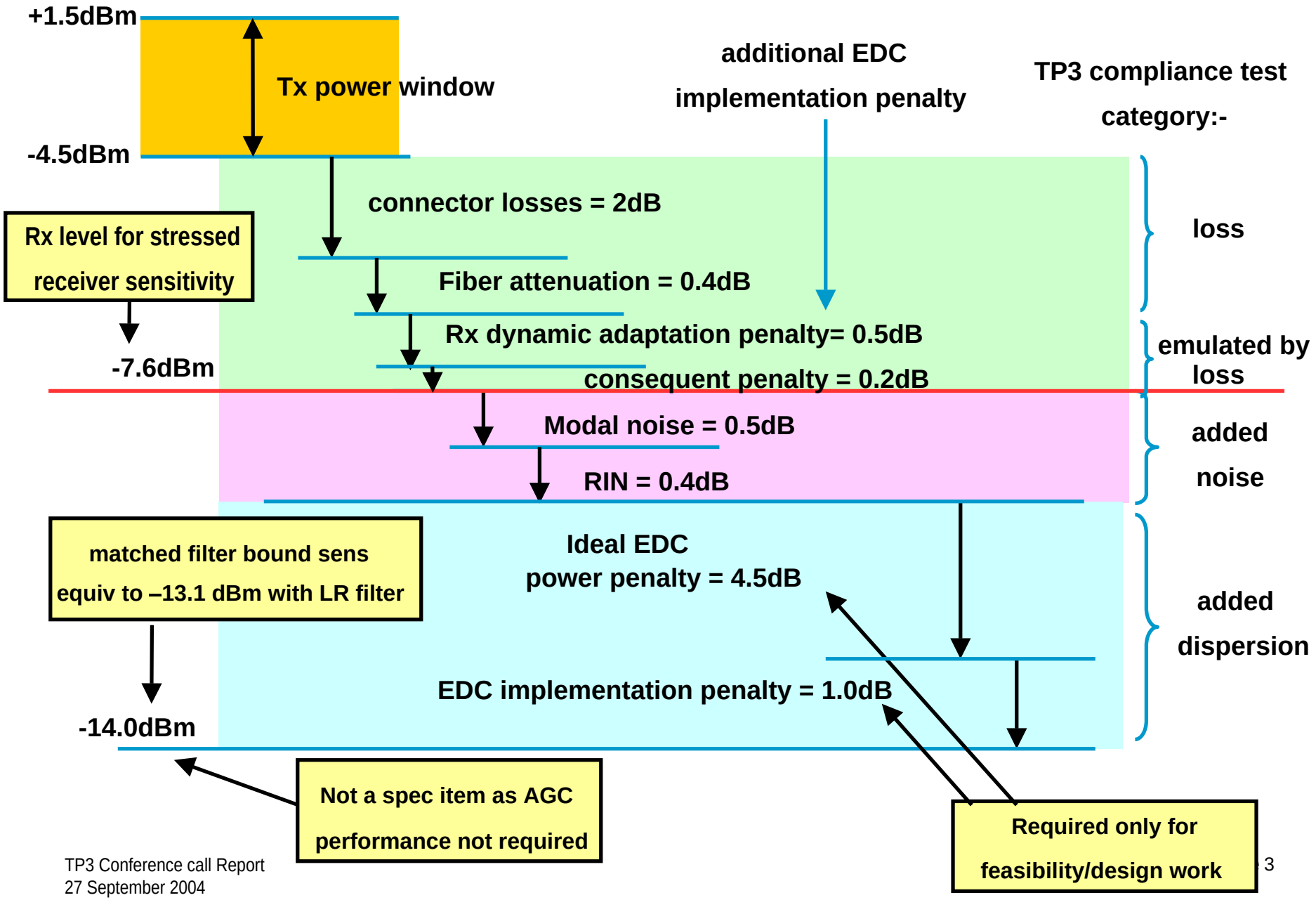
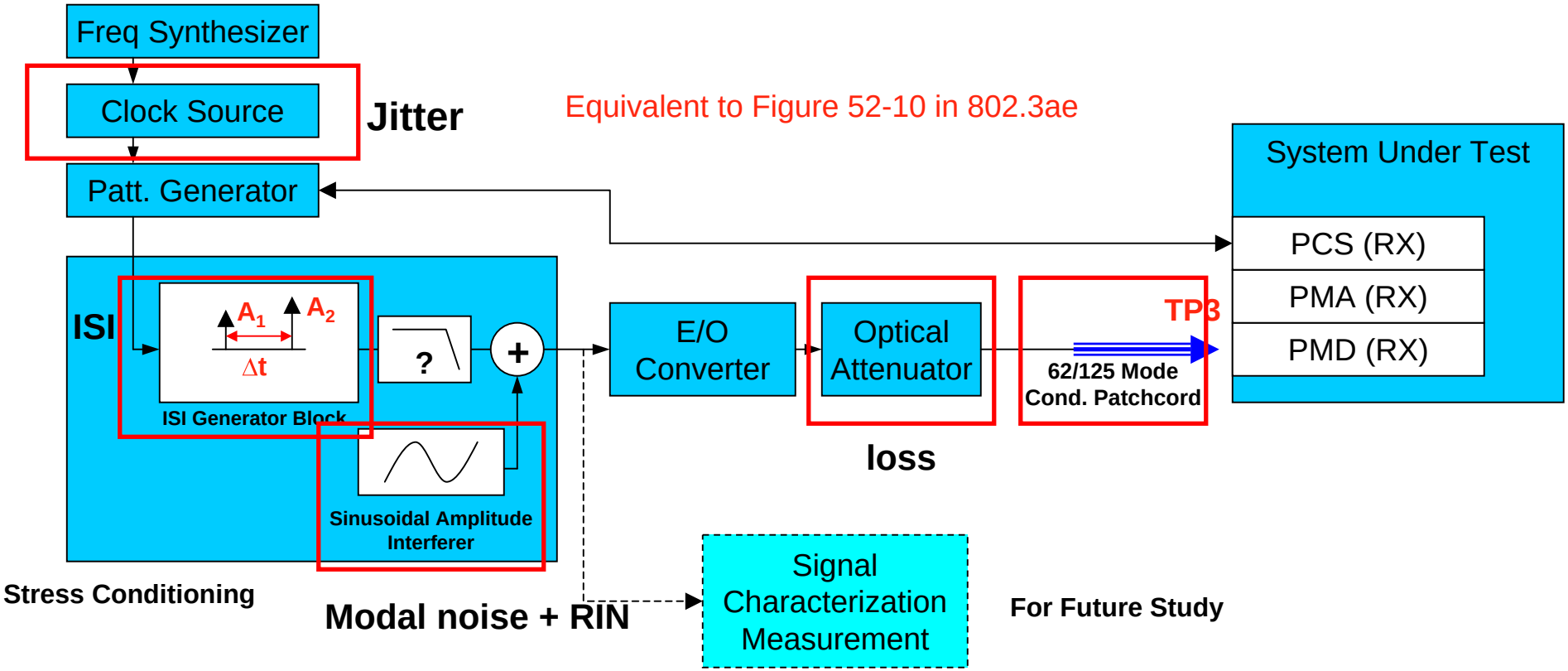
Report from Conference Calls on TP3 Specification

- **Review of link budget**
- **Lew Aronson /Jens Fiedler Oregon Proposal**
- **Philosophical debate**
- **Review of Stressors**
  - **ISI (static + time varying)**
  - **Modal noise + RIN**
  - **Jitter**
  - **Optical mode conditioning**
- **Conclusions & Further Work**

Interpreting the EDC Link Budget (OMA)

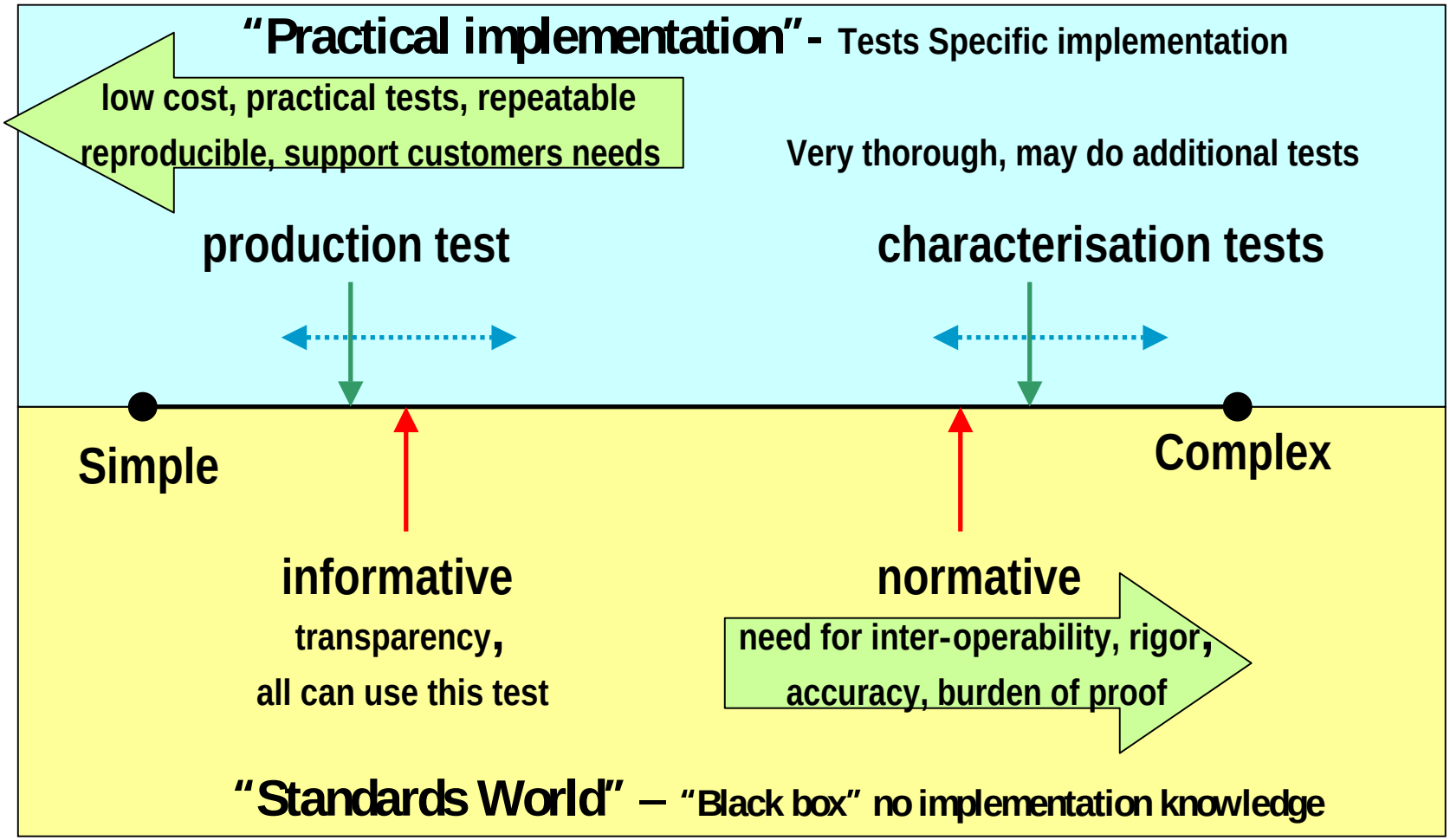


Lew/Jens Oregon Proposal



- **Leverages strongly off 10GBASE-LR**
- **Motivated to keep it simple whilst still represent all the key stressors**
- **Motivated to have practical test with reproducible results**

Philosophical Debate – simple vs complex?



- How much do we concern ourselves with practical implementation?
- To what extent do we want alignment with practical implementation choices?
- Group favors simple but NOT at the expense of rigor

ISI

- **Presentation by Petre Popescu and Piers Dawe**
  - **Normative and informative tests reviewed.**
  - **For informative: 2.3GHz BT filter gave a good fit**
  - **For normative:**
    - **“3 impulse model” fitting to Cambridge delay profiles with reasonably good fits achieved**
    - **3/4/5 impulse model with fixed delays**
  - **Open issues:-**
    - **which delay profile sets to choose?**
    - **How much can the parameters be restricted to ease implementation and yet still be valid (fixed equal delays?)**

- **Presentation by Willcocks and Weiner (Phyworks) on characteristics of “3 impulse” test**
    - **Explored PIE-D and PIE-L vs a range of normalised 3 impulse channels**
    - **useful tie-in with outstanding questions in Petre’s work**
    - **Proposed 1.0 UI and a=0.55**
    - **Proposed modulation of this for dynamic effects**

- **Measurements by Venu Balasubramonian (Scintera) on impact of E-O-E non idealities**
  - **Results to date indicate electrical ISI generator will be acceptable**

- **More work on representing time varying channel**
- **No measurement data presented either – channel adhoc addressing this**

Modal Noise + RIN

- **Lew suggested that we model modal noise + RIN as a sinusoid noise source**
  - **some reservations with a suggestion of using either a PRBS or Gaussian noise**
- **Infineon & Lew are doing some work on this area**

Jitter

- **Lew suggested a single high frequency jitter test (around 40-80MHz)**
- **Tom Lindsay has investigated this further and recommended an additional separate test (not part of normative stressed test) to test the loops ability to track low frequency jitter (5UI @ 40kHz)**

Optical Mode Conditioning

- **The group felt that a regular (Gigabit style) mode conditioning patch cord would be sufficient**

Conclusions and Further Work

- **Key Findings to date:-**
  - **Popescu/Dawe work has shown excellent progress towards establishing ISI model**
    - **Proposal to use 3 channels (pre-cursor, post-cursor, quasi-symmetrical)**
    - **4^{th} order BT at 2.3GHz provides a good choice for informative sensitivity test**
    - **3 impulse with variable delays vs 3/4/5 impulse with fixed delays**
    - **Proposal from Willcocks/Weiner on parameters for 3 impulse model and use of modulation for time varying effects**
  - **Early measurements from Venu indicate electrical ISI generator approach appears valid**
- **Further Work items:-**
  - **Need to select and validate impulse response and determine what restrictions are acceptable**
  - **Develop technique for testing for time varying fluctuations – modulation proposal**
    - **channel adhoc is characterizing time varying fluctuations**
  - **Establish suitable noise model for modal noise and RIN**
  - **Agree required jitter test**
  - **Finalize simplified normative test**
  - **Build and validate test**