IEEE 802.3ap
Signaling Ad Hoc

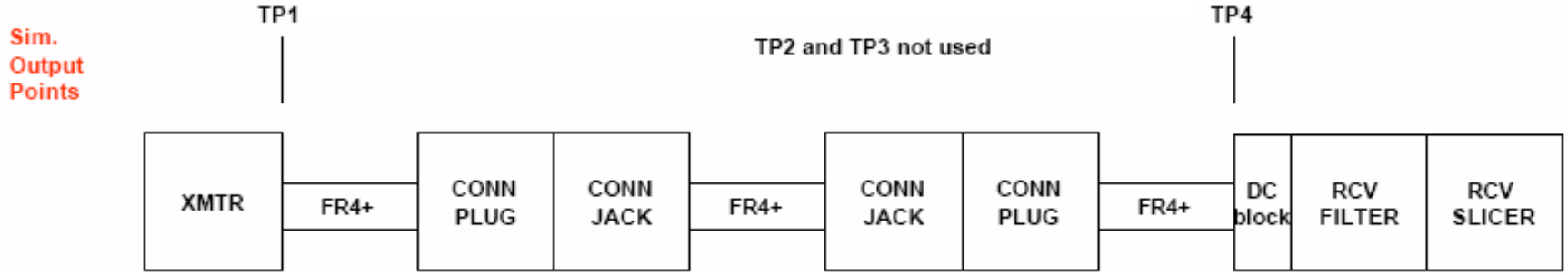
IEEE 802.3ap Task Force
16 Sept'04

Agenda

- Channel simulation methodology
  - StatEye presentation (Palkert(?))
  - Channel s-parm suite (D'Ambrosia)
- Simulation methodology discussion
  - Two proposals:
    - Hspice-based transient sim method with pathological WC NEXT/FEXT
    - StatEye – time domain analysis with equalization
  - Do we need another proposal?
- Define elements of the link model
  - test points
  - Definition of aggressors (NEXT / FEXT)
- Outcomes Today ☺
  - Finalize channel link elements (in principal)
  - Finalize the treatment of aggressors

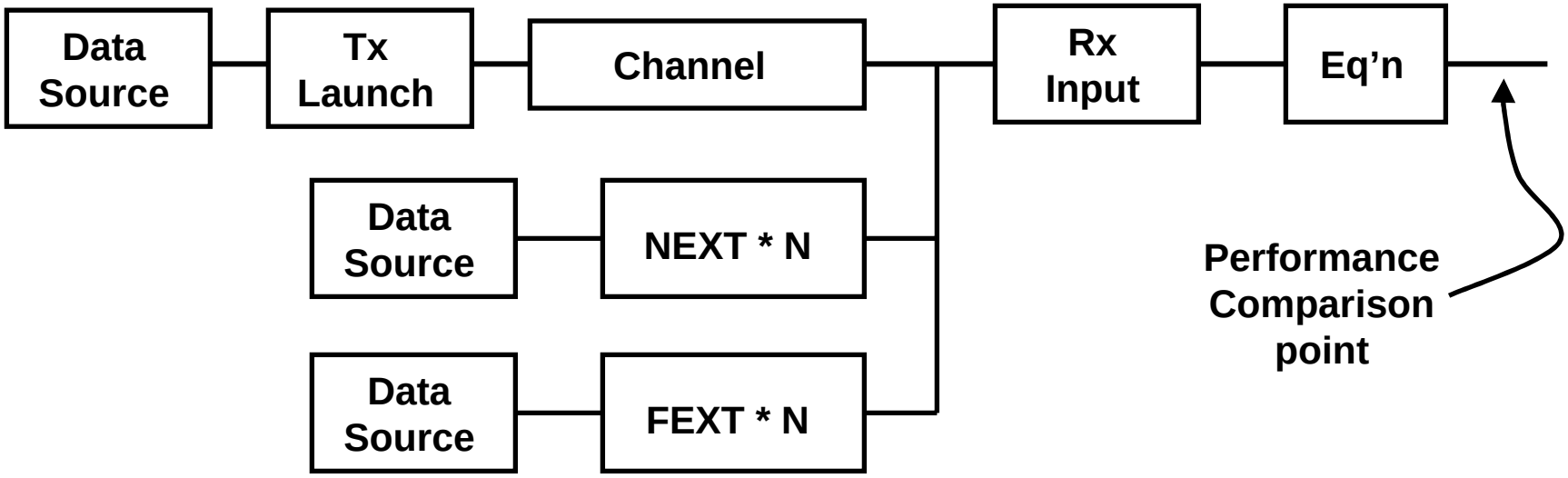
channel simulation model

- **From the channel ad hoc, the physical channel looks like:**



channel simulation model

- **Prototype simulation model can then look like:**
  - **Cascading blocks (Tx→channel → Rx) by ABCD matrix**
    - **Channel, source and loads represented by suite of f-domain s-parameters**
  - **NEXT/FEXT contribution by superposition at Rx input**
    - **Cap included in Rx input**
    - **Uncorrelated or w/c data sources - sin(ωt) or data**



Input parameters

- Data source
  - PRBS, random, killer-packets (?)
- Data coding
  - Purpose? Candidates?
- Line Coding
- Tx Conditioning
  - Equalization, launch electrical characteristics
- Channel (loss, NEXT, FEXT)
- Rx input
  - Rx electrical characteristics
- Rx Equalization

Simulation Performance Metrics

- **SNR / BER**
  - **Sensitivity to input noise**
- **Jitter**
  - **Timing recovery jitter sensitivity**
- **NEXT / FEXT effects on signal quality**
  - **SNR degradation**

Meeting Schedule

- Thursday, August 5 (8:00AM PDT)
  - Signaling ad hoc introduction
  - Discuss initial work items for group
- Monday, August 23 (8:00AM PDT)
  - Channel simulation model draft - for early sims
  - Solution comparison criteria
- Thursday, September 2 (8:00AM PDT)
  - Continuation of channel simulation model details
  - Define link model, test points, and test patterns
  - Define sections of the link model not covered by the channel ad hoc
  - Review NEXT / FEXT considerations (definition of aggressors)
- Thursday, September 9 (8:00AM PDT)
  - Do we need another meeting?
- **Thursday, September 16 (8:00AM PDT)**
  - **Finalize channel simulation models for studies**
    - **Use data from channel model ad hoc when available**
  - **Run sims and report results**