COM Discussions

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# Motivation

❑ Reflector response was 50+ … !

❑ Feedback/topics from many

❑ Bringing to the large group

- Study may be more effective in small groups
- Focus groups
  - Half-dozen-or-so people
  - Connect "offline" to discuss and study
  - Bring tradeoffs or study results to the larger group (F2F) or Ad Hoc

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Lexicon of feed back

❑ COM Ref Rx and actual design parity
❑ COM signaling architecture: include a long FFE.
❑ COM signaling architecture: Quantize DFE
❑ COM signaling architecture: balance between Tx FFE vs Rx FFE
❑ Power vs loss
❑ Power implications vs COM signaling architecture choice
❑ Use C2M/CR host to drive COM parameters
❑ Asymmetric channel and package loss
❑ Go back to a reasonable worst case or not
❑ COM parameters and speed

❑ Let's organize this a bit

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Foundations are needed first…
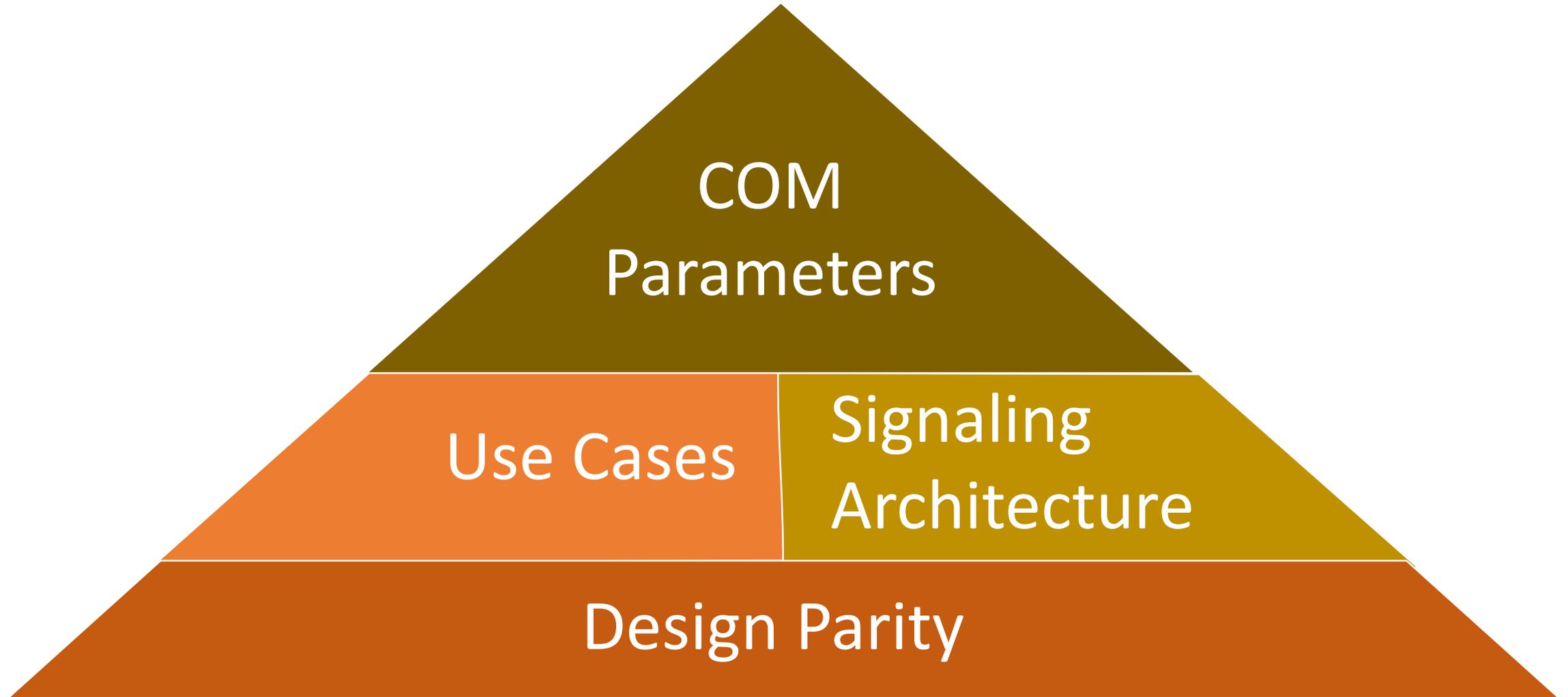
Attempt at organizing COM issues

Design Parity

Reference Rx relation to
Actual Rx designs

Use Cases

Channel priority for PHY specification: CR/KR/C2M/C2C

End User needs: channel/package material and construction

End User needs: power tradeoff and symmetry

Should COM be used for C2M?

Ref Signal Arch

TX/RX Balance

Power consideration of various architectures

Relationship between architecture and channel impairments

How much reference FFE, DFE, and CTF is needed

Computational efficiency

COM Parameters

Package, Tx, Rx, Noise, etc

Pass/Fail criteria – "Reasonable worst case"

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Overlaying the Standards Process

Design Parity

Reference Rx relation to
Actual Rx designs

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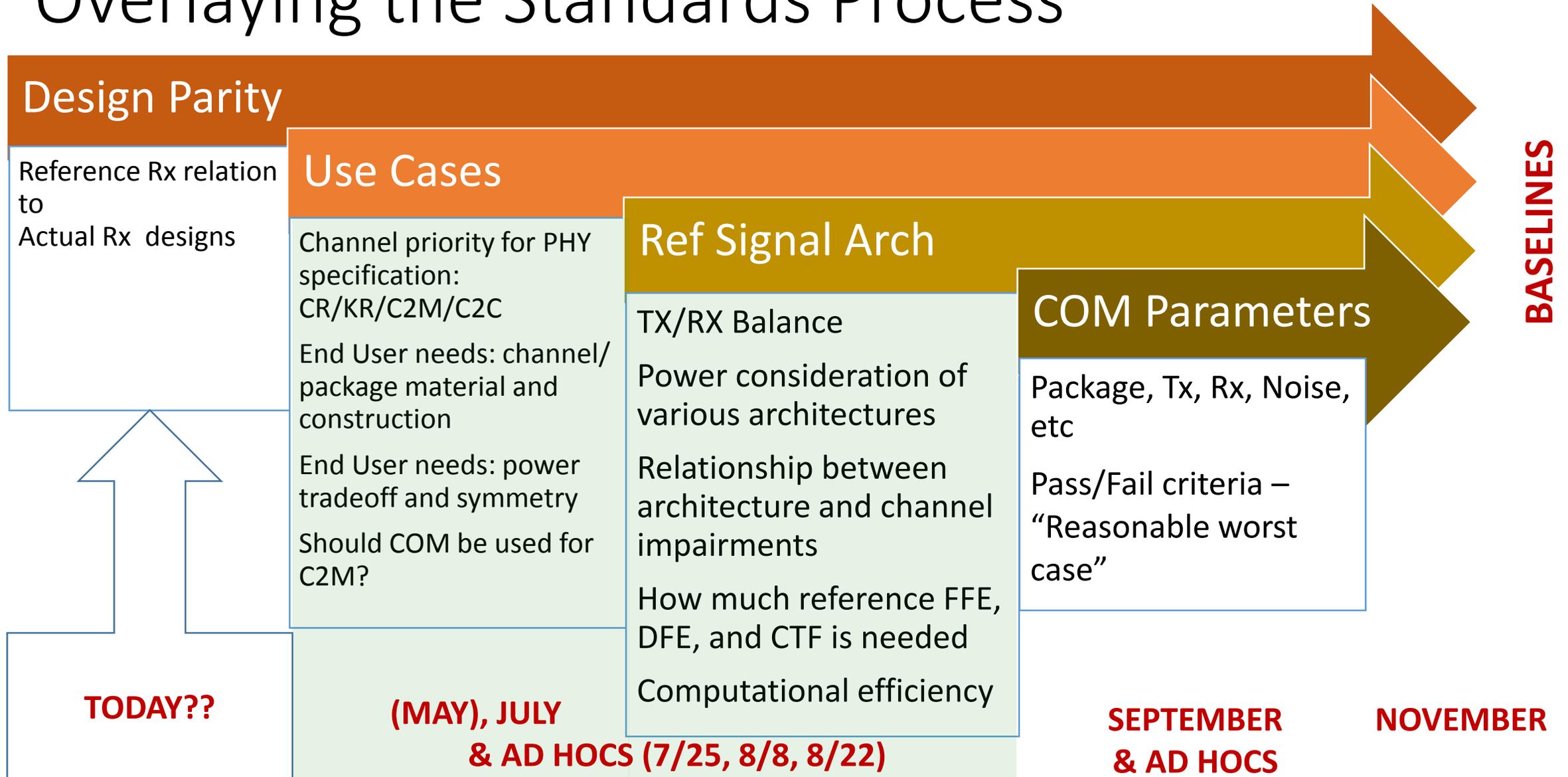
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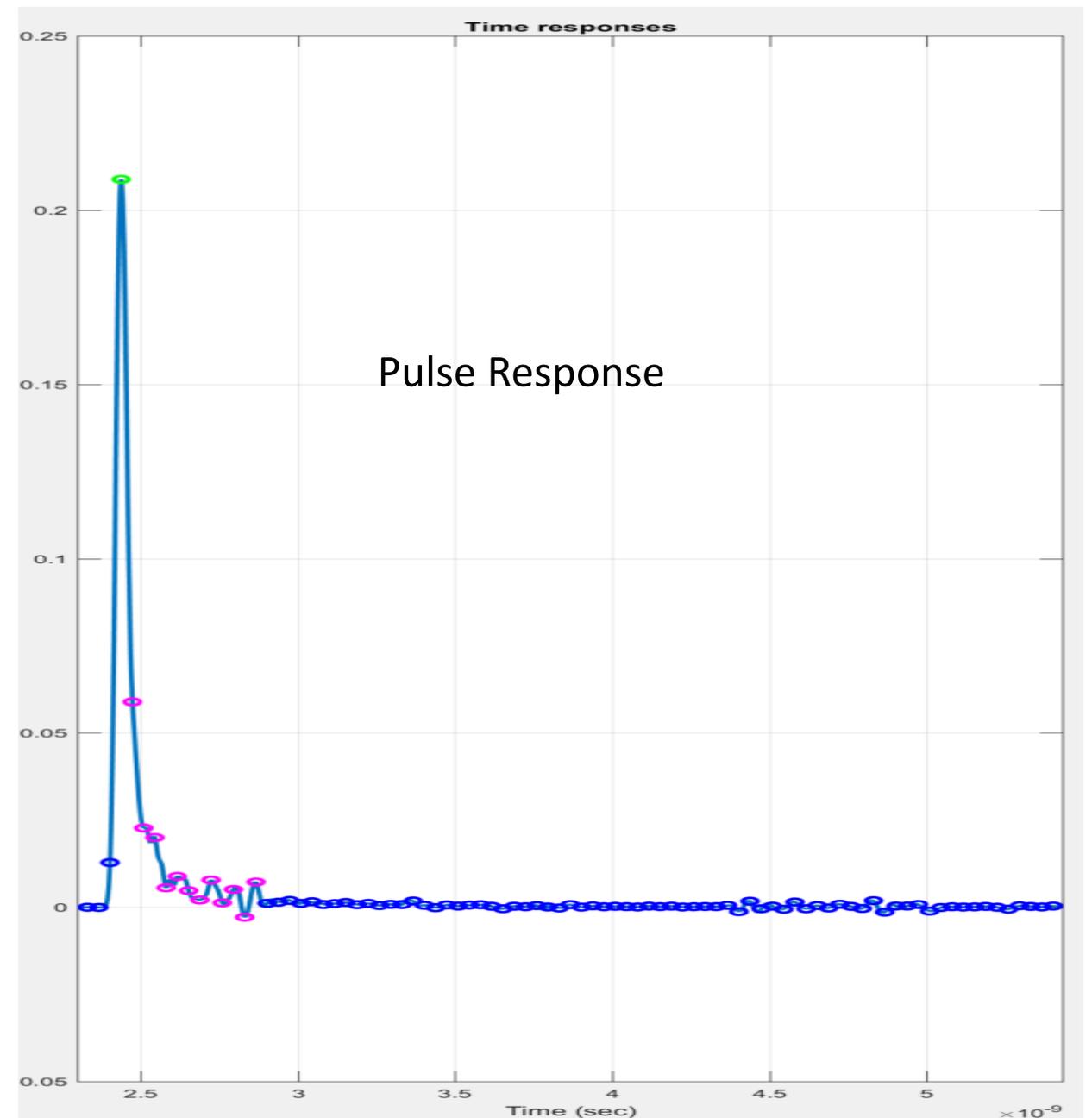
Pass/Fail criteria – "Reasonable worst case"

BASELINES

TODAY??

**(MAY), JULY
& AD HOCS (7/25, 8/8, 8/22)**

**SEPTEMBER
& AD HOCS**

NOVEMBER

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Channel ….
Operating Margin: Interconnect Designer Expectations

❑ What needs to be fixed and what can be ignored?

Pulse Response

Design Parity Discussion

❑ What is the purpose for the reference receiver?

- Is it: Minimum performance?
- Is it: A template for minimum performance design?
- Is it: A reference for receiver compliance testing?
- Is it: A way to qualify a channel?

❑ Consider that actual receivers are complex and there may be as may designs as receiver designers

- How does that effect the answers above?

❑ Consider COM for a channel needs to be the same regardless of algorithm implementation