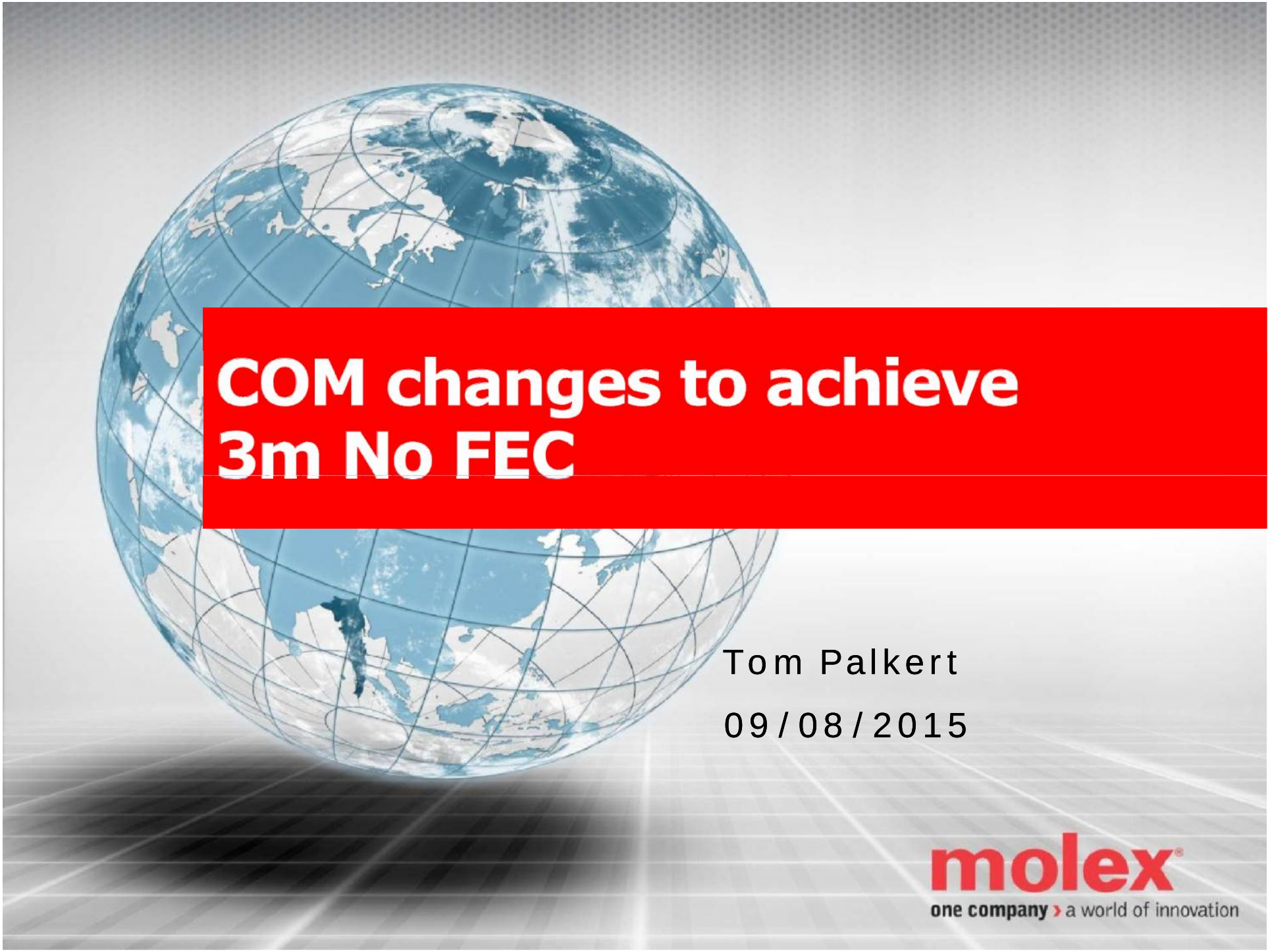

COM changes to achieve 3m No FEC

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Proposal Goals

- Allow 3m NO-FEC cables to pass COM
- Distribute tightening of margin to many different parts of the channel
- Combines parts of what many groups area asking for
  - Change the limit
  - Receiver changes
  - Transmitter changes
  - Package Model Changes

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Change the limit

- Change COM from 3.0 to 2.8
  - Supported by both cable measurements and simulations
    - Requires minimal improvements in RX
    - Does not specify how improvements are achieved
      - Allows max flexibility to host design

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Change the cable loss

- To achieve 3m with 25-26 AWG cable insertion loss increases from 12.98 to 16.0dB
  - Gives cable providers adequate yield
  - Original request was 16.5dB

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Change the package capacitance

- Selected values that can be achieved by Ethernet switch ASICs
  - C_d = 2.0e-4 nF 20% improvement
  - C_P = 1.35e-4 nF 25% improvement
- Results in improvement of 0.3318 dB in COM

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Transmitter changes

- Improve TX characteristics
  - A_v = 0.43
  - A_fe = 0.43
  - SNR_TX = 28.4
  - Ane = .645

Receiver improvements

- Assume better equalization and 85 ohm package impedance
  - CTLE gain = 16dB
  - DFE taps = 16
  - Package Z_c = 85 ohms

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Conclusion

- 3m No-FEC cables now attainable
- Spreads the margin out evenly

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Thank You

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