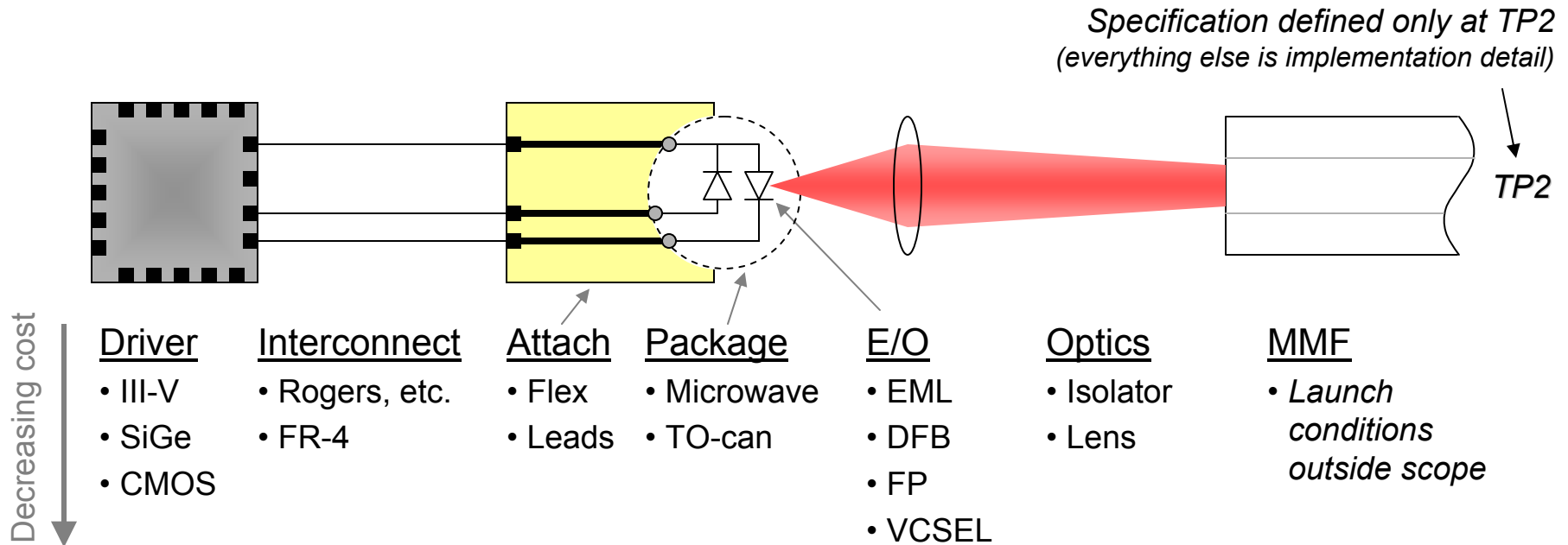


TP2 overview



Electrical Performance

- Rise / fall times
- Interconnect loss (ISI)
- Reflections (nulls in $H(f)$)

Optical Performance

- Rise / fall times
- Nonlinearity (e.g. relaxation oscillation)
- Reflections (RIN)

Other considerations

- Yields
- Power/heat
- Reliability

Cost studies

- Which of these columns are within our “signaling” scope?
 - Optics?
- What are the realistic choices within each column?
 - Technology and performance specs
 - Consider these as the “operating points”
- Can we get a sense of $\frac{\Delta\text{Cost_column}}{\text{Total_cost}}$ for each column at its operating point?
 - Technology
 - Yield vs. performance specs
- The highest cost sensitivities should be the ones on which we focus our work

Performance studies (simulations & experiments)

- Expect the normal trend that lower costs will lead to lower performance
 - Lower performance is defined as penalty impact to power budget
- Therefore, to explore costs, we must also evaluate performance
 - Simulations (simulated waveforms and ideal EDC options)
 - ... and more than PIE metrics due to non-linearities
 - Experiments (real waveforms and EDC options)
 - Combinations
- Can this work be done without channels?
 - My guess is “no”

Focusing the work – inputs required

- Performance studies must be guided by where *cost benefits* lie
- Simulation work must be guided by where *cost benefits* lie but also by the *practical range of parameter values* determined by limits or availability and yields of actual hardware (the operating points)
- Performance studies require *test metrics/methods* to compare their tracking with penalty results
- ... others?