Status of Alternative Optical Package R&D

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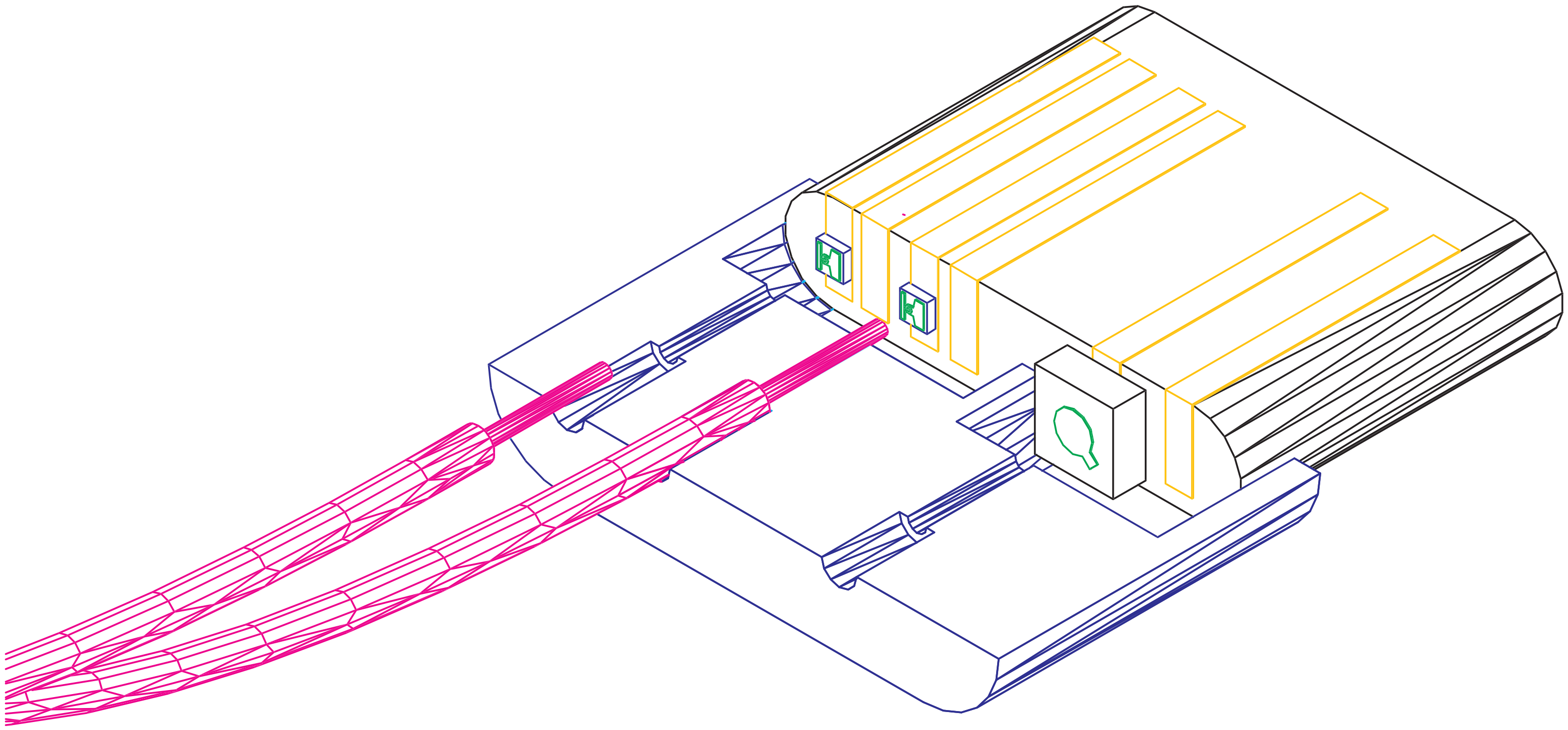
Outline of Talk

- Introduction
- Status
- Plans

Introduction

- **connector concept design**
  - ◇ fabricated using macor (machinable ceramic)
  - ◇ simple two-piece design
  - ◇ precisely machined cap and base for alignment
- **cap**
  - ◇ 3 holes for fibres
- **base**
  - ◇ deposit gold traces for wire bonding, VCSEL and PIN placement

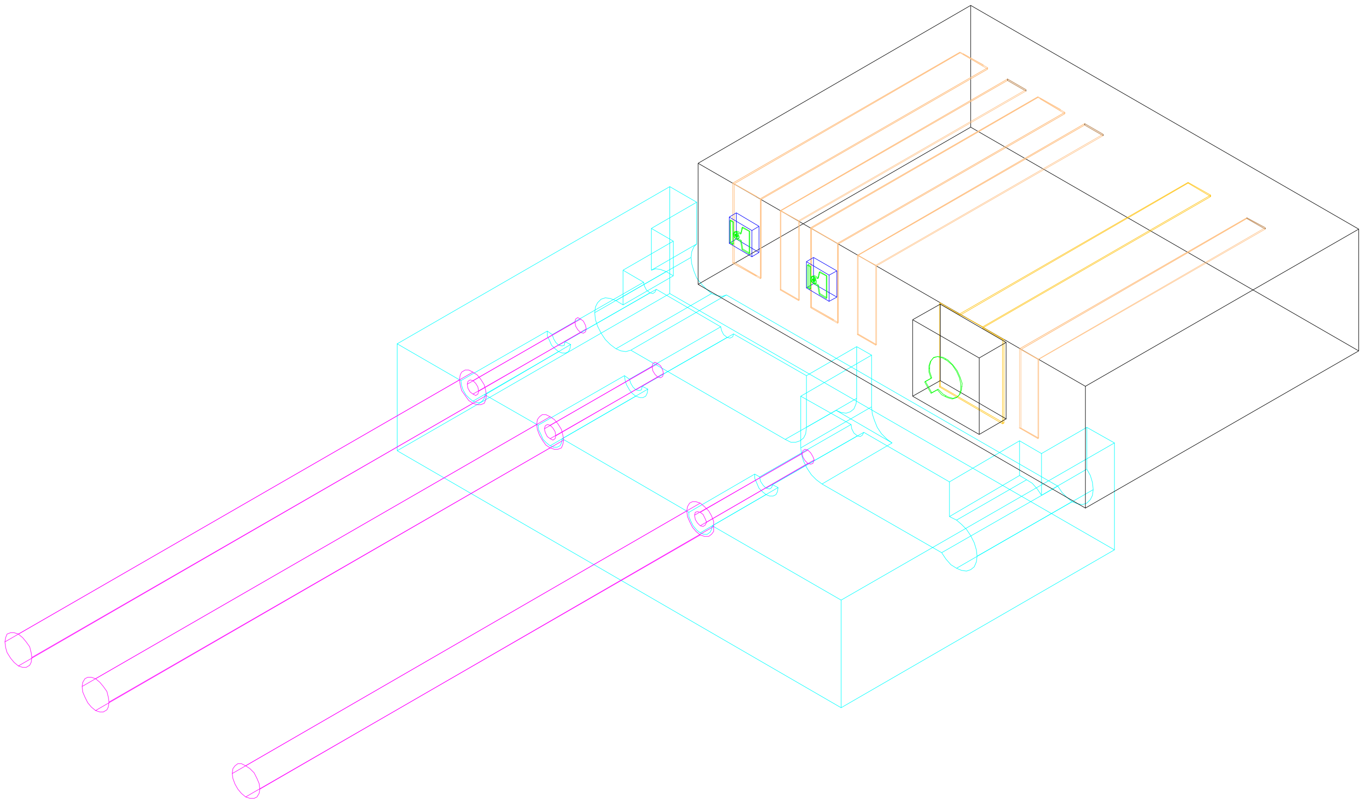
Cap and Base



December 99 Status

- surface of gold trace on macor not flat enough for good VCSEL adhesion
  - → deposit gold trace on aluminia
  - → redesign base/cap with square corners instead of round corners for ease of machining of bases by Hybrid-Tek
  - → widen VCSEL gold traces from 250 to 300 μm to stay clear of roll-over region from gold to alumina to maximize contact area

Cap and Base



Status

- Hybrid Tek has delivered 20 bases
- length precision within tolerance
- width is too wide by $200 \mu m$

  $\rightarrow$ fabrication of new caps, VCSEL and fiber mounting jigs
- trace location precision within tolerance
- traces look flatter than those on macor
- VCSEL's stuck to traces!

  $\rightarrow$ currently assembling opto-packages