

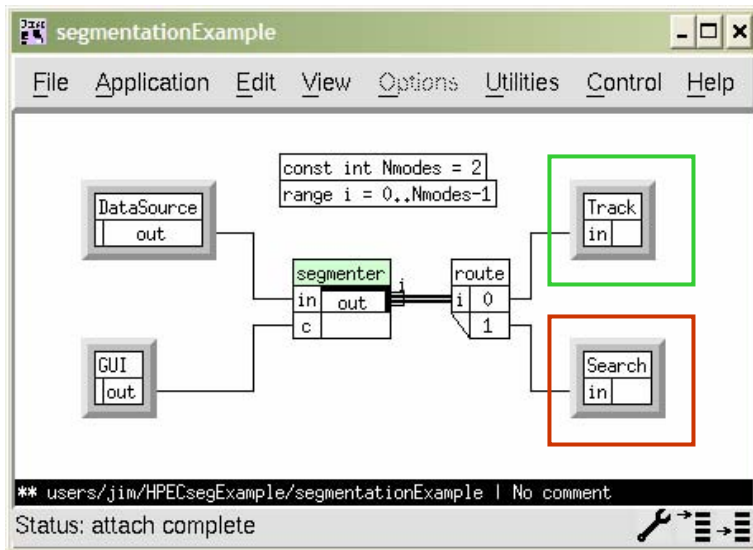
HPEC 2004



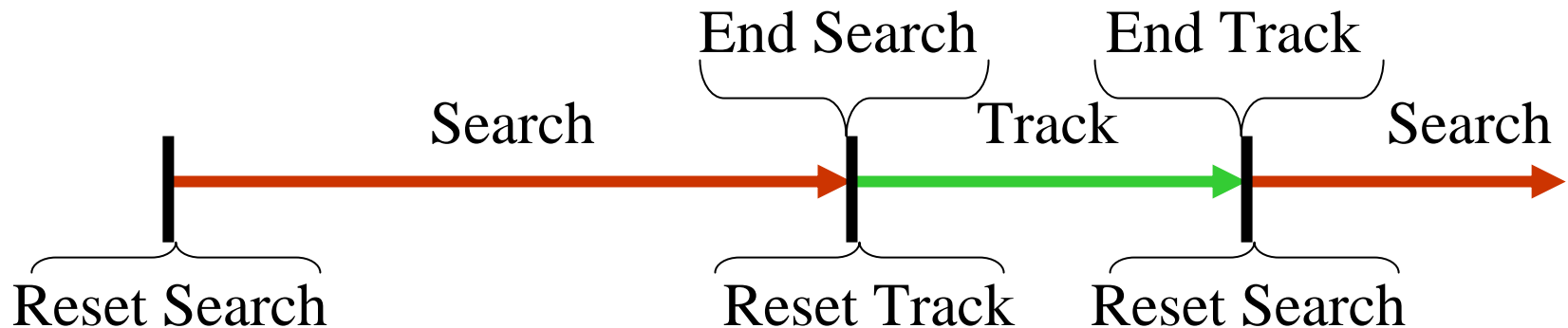
Implementing Modal Software in Data Flow for Heterogeneous Architectures

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How Do We Program Modal Software in Data Flow?



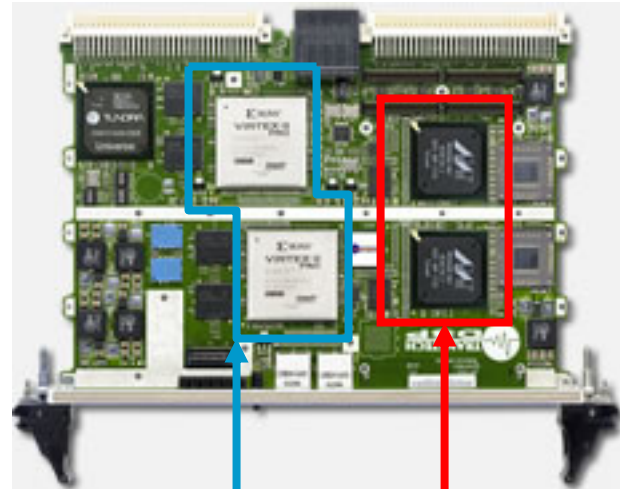
- **Modal software breaks data streams into finite length segments**
- **Extra processing at the beginning and end of segments**



How Do We Program This Heterogeneous Architecture?



- Gedae is a powerful programming tool for boards of Power-PCs.
- The Gedae-RTL language extension to Gedae allows mapping processing to FPGAs.



Two Power-PC 7447s

Two Xilinx Virtex-II Pro FPGAs



Gedae Language Features

Segmentation

- Reset and EndOfSegment Methods
- Exclusivity
- External State

Gedae-RTL

- Seven Functions
- Language Support Package

The Gedae language allows specification of a complete modal software system and implements it on heterogeneous hardware.