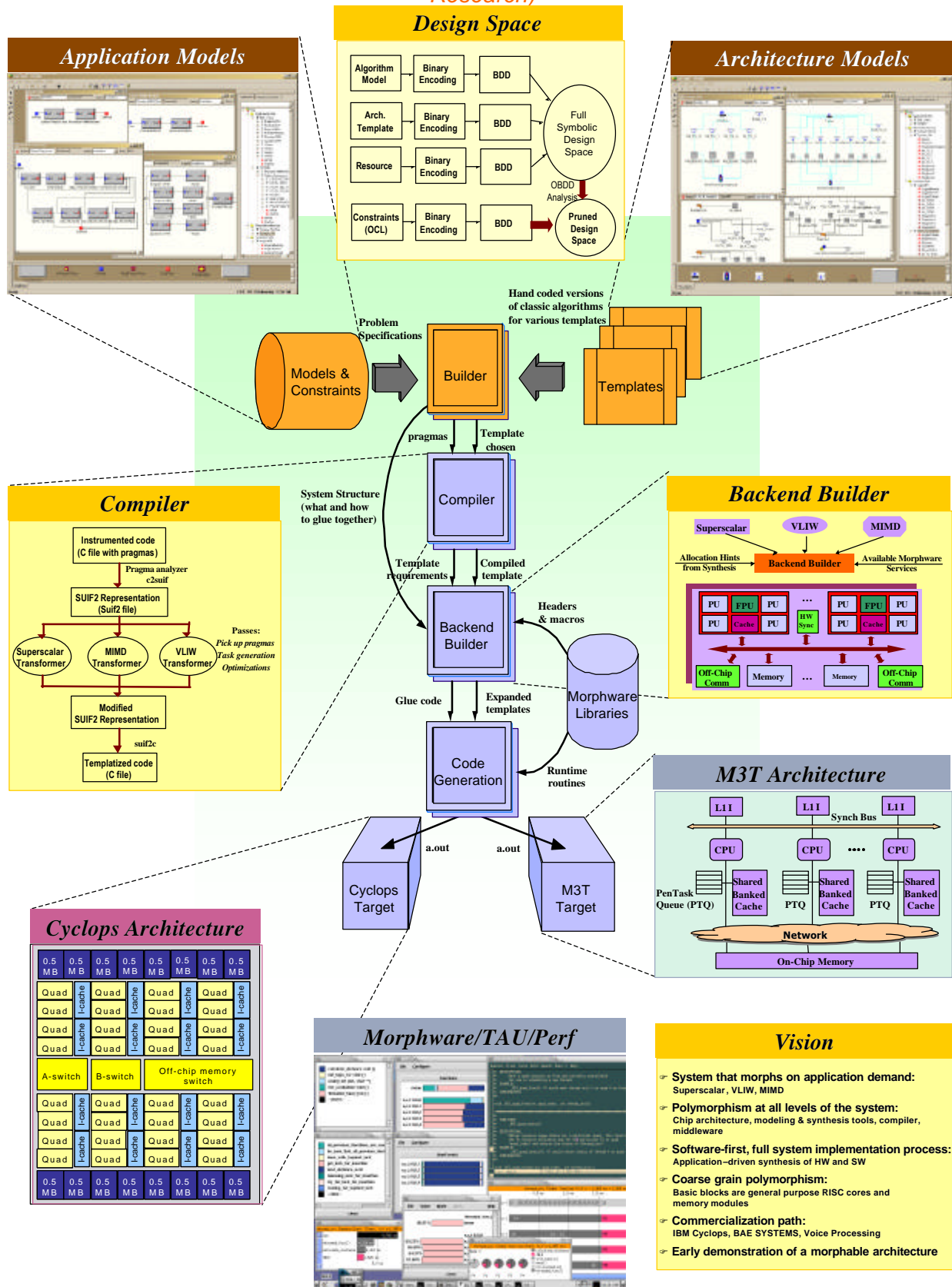


Morphable Multithreaded Memory Tiles (M³T)

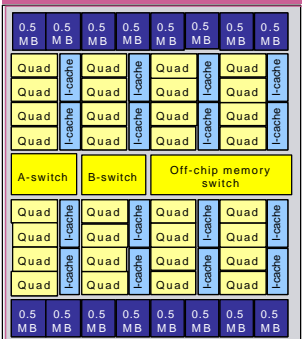
Josep Torrellas (University of Illinois at Urbana-Champaign)

Ben Abbott (Southwest Research Institute) Ted Bapty (Vanderbilt University)

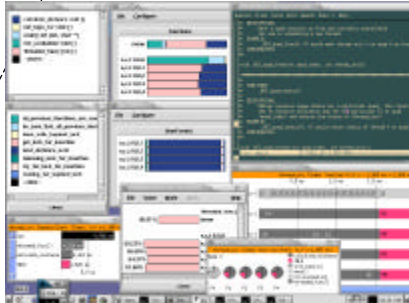
Bob Bassett, David Ngo (BAE SYSTEMS) Hubertus Franke, Jose Moreira (IBM Research)



Cyclops Architecture



Morphware/TAU/Perf



Vision

- System that morphs on application demand: Superscalar, VLIW, MIMD
- Polymorphism at all levels of the system: Chip architecture, modeling & synthesis tools, compiler, middleware
- Software-first, full system implementation process: Application-driven synthesis of HW and SW
- Coarse grain polymorphism: Basic blocks are general purpose RISC cores and memory modules
- Commercialization path: IBM Cyclops, BAE SYSTEMS, Voice Processing
- Early demonstration of a morphable architecture