Architectural Level Resource Estimation and Modeling

This work addresses the key issue of estimating resource requirements (i.e. power dissipation) to run multimedia applications on embedded devices. We are developing a methodology and tools that help translate product requirements to architectural requirements by eliminating the redundancy of extensive and time consuming simulations being performed for each system design. We propose to build a three level (user, architect, and programmer) library of embedded system components, commonly used in building applications, algorithms, and architectures.

Enabling fast, automated architectural level resource requirement estimates is essential to reduce the design cycle time. This requires not only creating a particular model for a given architecture and multimedia component, but also a leap in developing a quick, compact, and open modeling toolset. Such toolset would not only speed up this area of OPP research in itself, but could eventually double as a multimedia component library building instrument for further architectures and applications.