DIFdoc: a standard format for visualizing hierarchical dataflow representations

Ivan Corretjer, University of Maryland
Shuvra S. Bhattacharyya, University of Maryland
High Performance Embedded DSP Design

• Dataflow has been shown to be a highly intuitive and efficient conceptual and visual format
  – Formal properties (scheduling, bounded memory, etc.)
  – Hierarchical (captures complex designs)
  – Exposes parallelism

• Many commercial tools utilize dataflow for DSP system design, e.g. ...
  – Gedae
  – National Instruments LabVIEW
  – Agilent ADS
DIFdoc

• Combined textual-pictorial representation of dataflow designs
  – Provides a unique representation of an entire dataflow hierarchy
  – Tool-independent
  – Human-readable dataflow graph documentation format

• Displays dataflow-based design hierarchies using HTML and dot
  – Indentation used to represent hierarchy
  – Pictorially represent graphs
FM demodulation example from GNU radio.

Synthetic aperture radar example from MCCI.