1. Motivation
How to achieve:
- a fast video-in-video stream,
- a self energy-supporting software defined radio,
- a low-power EnergyBus and
- an energy autonomous nano-satellite.

2. Challenges
- Modern multimedia applications: high demands on system performance.
- Resource usage must be minimal.
- Hence: trade-off between resource usage and performance.

3. Synchronous Dataflow Graphs
- Popular dataflow computational models.
- Novel analysis methods needed.

4. Methodology

4.1 Application Model

4.2 Architecture Model

4.3 Mapping

4.4 Performance Analysis

5. Translation of SDF Graphs and Architecture to Timed Automata

5.1 Results
- Derives an automatic schedule that fits on a given number of processors.
- Maximises the throughput.
- Handles heterogeneous platforms.
- Quantitative model-checking.

6. Experimental Performance Evaluation

6.1 Efficient Scheduling
- Throughput vs Number of Processors Trade-off

7. Future Work
- Energy optimal synthesis.
- Translation to Energy-Aware Automata.
- Reduction techniques of energy models.
- Extension with stochastic and energy costs.
- Cost optimal reachability analysis.
- Multi-core LTL model checking.
- Dynamic Power Management.

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NO ENERGY VAMPIRES ALLOWED!