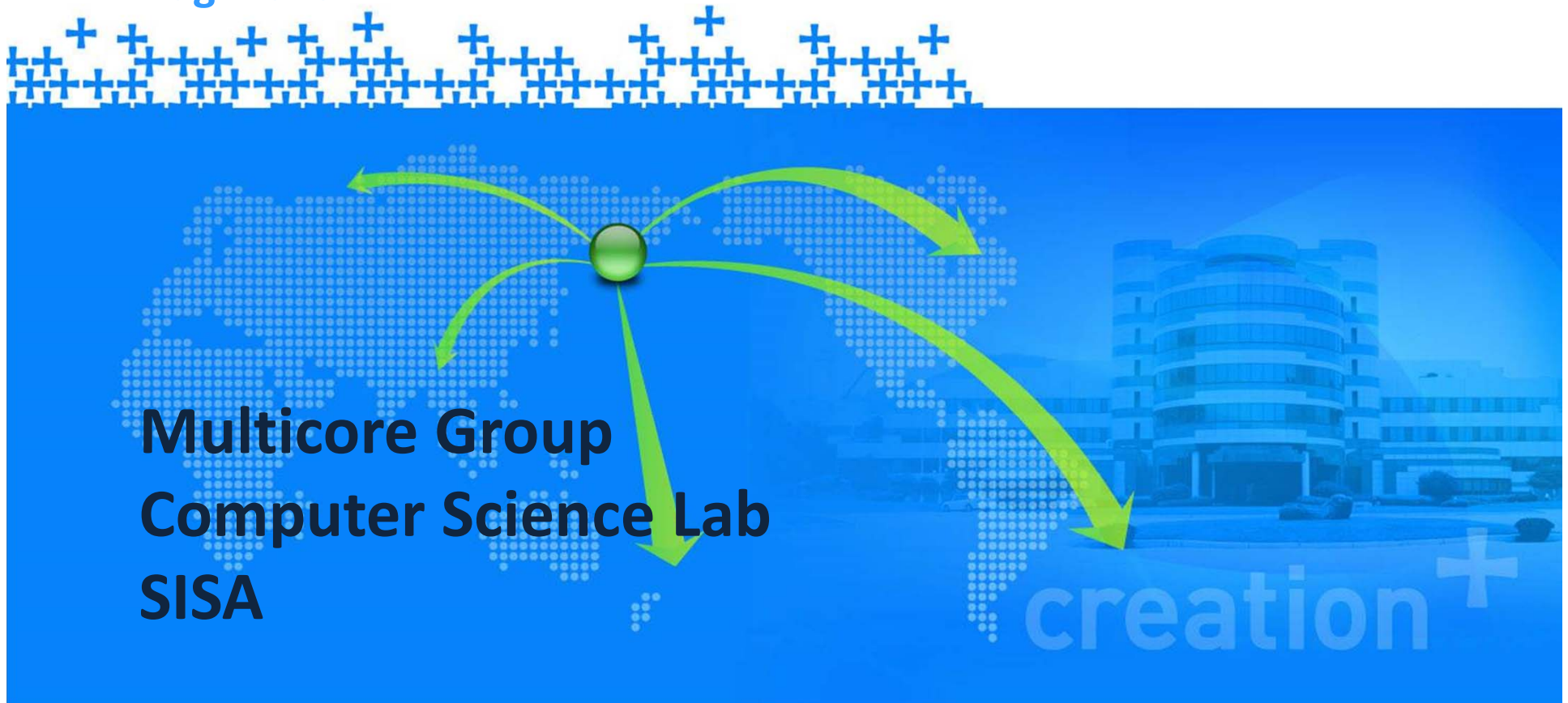


# Scalable Topology Language for Manycore Processors



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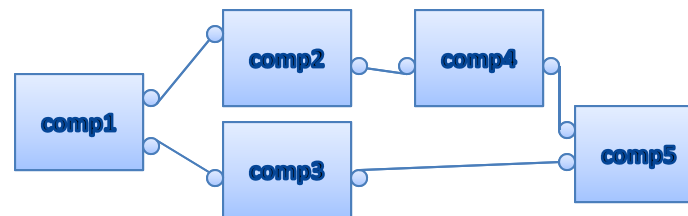


**Multicore Group  
Computer Science Lab  
SISA**

creation +

# Component Configuration Language (CCL)

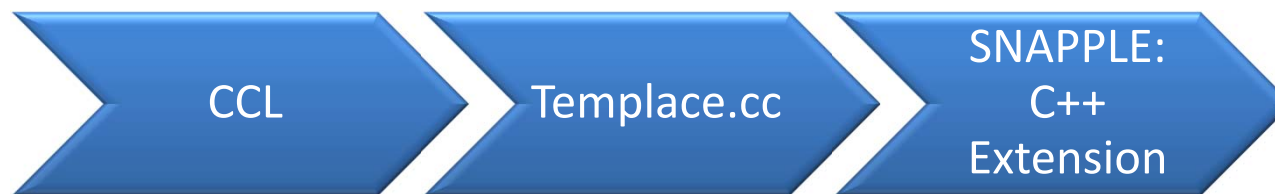
- Applications in Samsung Parallel Run-time Tools and Application (SPARTA) are represented as chained components, which are connected through ports.
- CCL is a Domain Specific Programming Language for rapidly generating component "glue" code for a SPARTA application.
- CCL compiler is implemented in ANTLR(ANother Tool for Language Recognition) using Java.



- **Language constructs available in SPARTA:**
  - Intra-component composition
    - **Ports** for inputs and output
    - **Functoids** are units for processing data, and for sending and receiving data between input and output ports
  - Inter-component composition
    - Applications are represented as graphs (e.g., chains with a pipe-and-filter pattern)

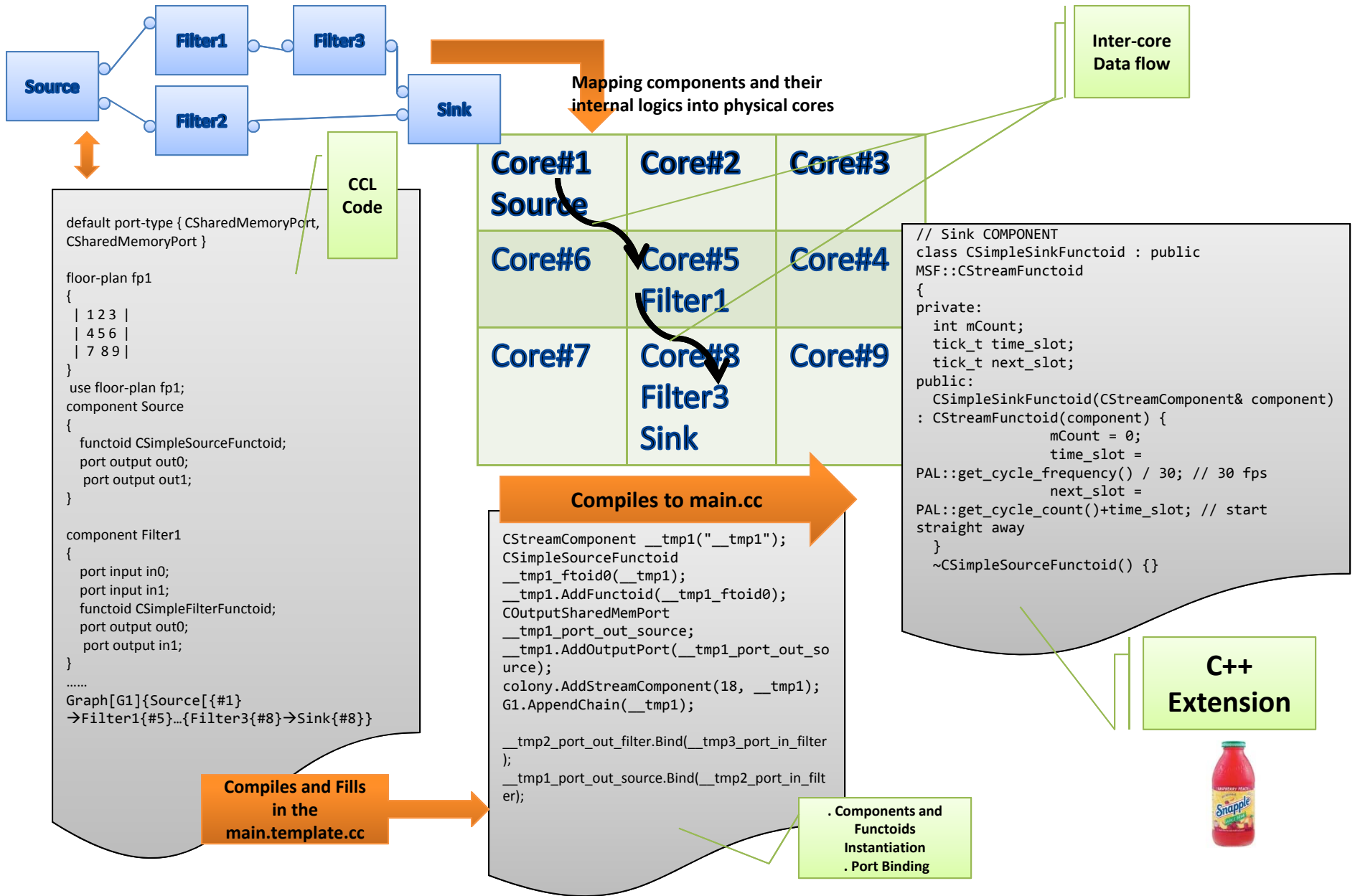
# Component Configuration Language (CCL)

- **CCL compiler compiles a given program and adds to the template (main.template.cc) to generate the C++ code that can be compiled by the C++ compiler.**
- **CCL compiler adds the following information to the template file:**
  - Component definition and instantiation
  - Port declaration and bindings
  - Functoid declarations

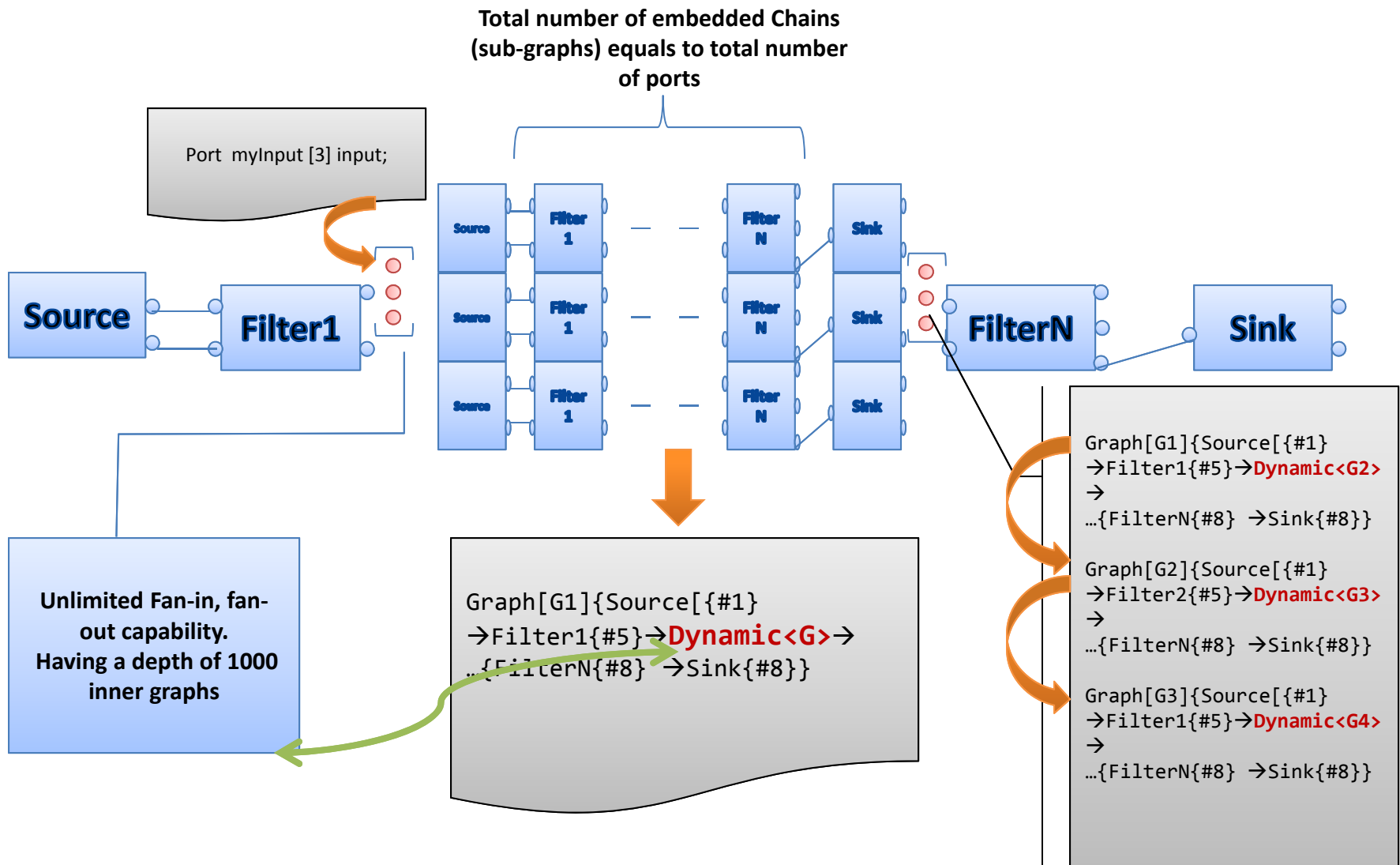


- **Mapping of components to tiles, based on user defined criteria**
  - Random, repeated, sequential, ...

# CCL 1<sup>st</sup> Version



# Scalable Topology through Enhanced CCL



# Future Work

- **Adding capability of controlling Quality of Service (QoS) features.**
  - Buffer size
  - Memory usage