Lab2: Channel and Interface

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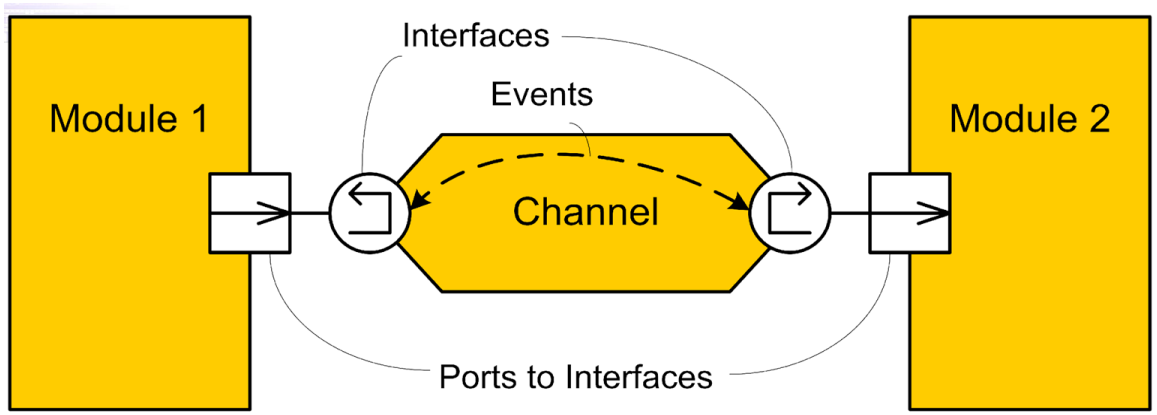
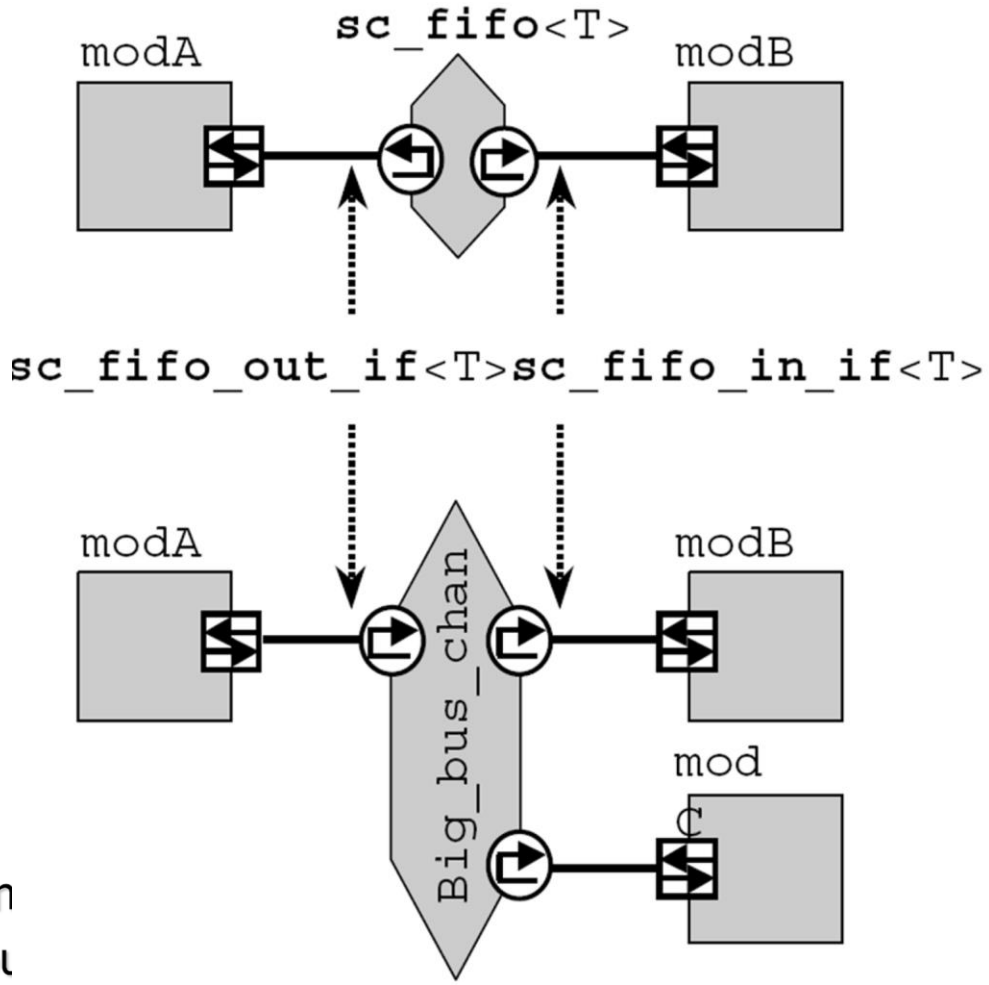
Channel and Interface



- Channel
  - sc_signal<T>
  - sc_signal_resolved
  - sc_signal_rv<W>
  - sc_buffer<T>
  - sc_fifo<T>
  - sc_mutex
  - sc_semaphore
- Interface
  - sc_fifo_in_if
  - sc_fifo_out_if
  - sc_mutex_if
  - sc_semaphore_if
  - sc_signal_in_if
  - sc_signal_out_if

Example: FIFO Interface



sc_port <*interface*> *portname*;

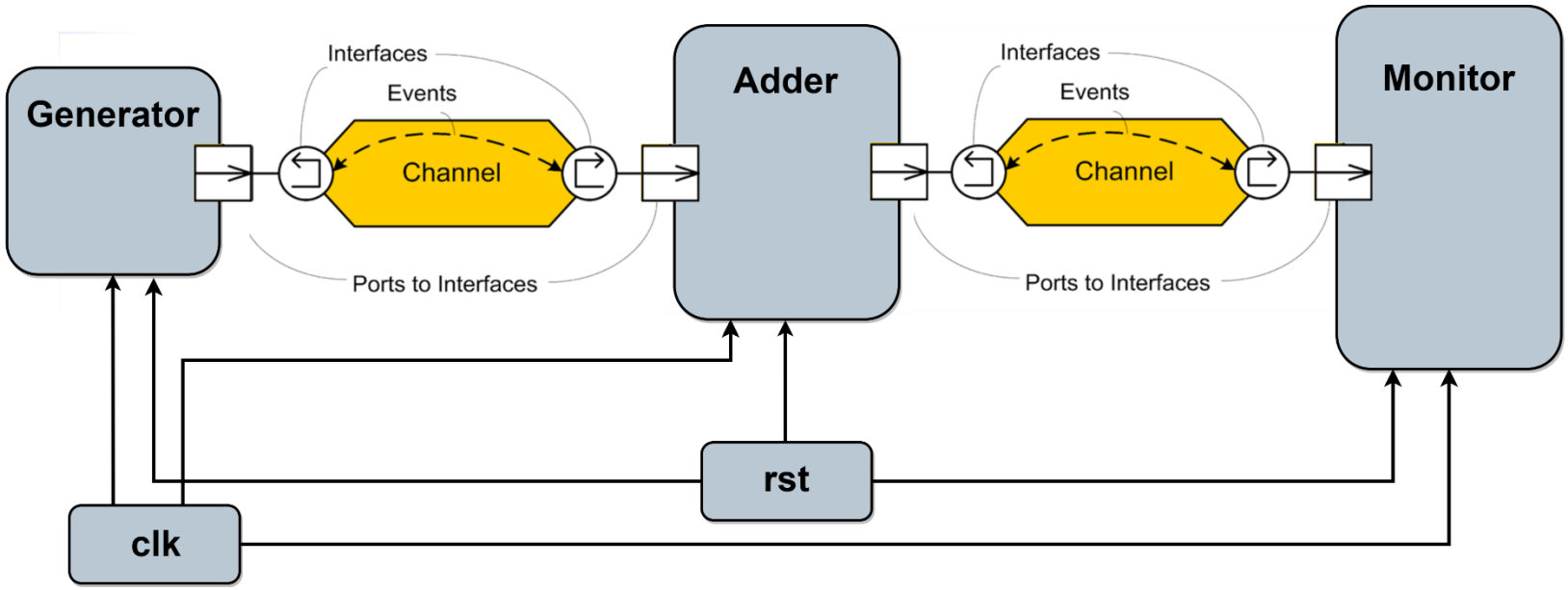
Example:

space

```
SC_MODULE(stereo_amp) {
    sc_port<sc_fifo_in_if<int> > soun
    sc_port<sc_fifo_out_if<int> > sou
    …
};
```

Lab2: Adder with channel interface

- Three modules
  - Random number generator (random seed = i+1)
    - Generate 100 random numbers, and the range is between 0~99
  - Adder
    - Compute the sum of the two inputs
  - Monitor
    - Check the correctness of the addition results



Lab Requirement

- Due in one week (2023/05/31)
  - Complete the three modules.
  - Practice **sc_fifo**, **sc_signal**, and **sc_buffer** in this Lab
  - Use Platform Architecture and Terminal to simulate output results.
    - Without channels in the PA
    - With channels outside the PA
  - Upload compressed file which include source codes (all of your file, include PA project file, source code….) to E3@NYCU
    - File name rule: Student ID_Lab2