VciVgsb

1) Functional Description

This hardware component is a generic system bus respecting the VCI advanced protocol. As any bus, it supports one single transaction at a given time. It reproduces accurately the timing behaviour (both throughput & latency) of the PIbus.

It gives the system designer a generic "communication black-box" with a parametrized number of VCI initiator ports (NB_INITIATOR), and a parameterized number of VCI target ports (NB_TARGET). It can be used to build a "flat" interconnect, where all VCI initiators and targets are identified by a single index:

- The VCI targets must be indexed from 0 to (NB_TARGET - 1).
- The VCI initiators must be indexed from 0 to (NB_INITIATOR - 1).

When several initiators try to use the bus, the arbitration policy is round-robin.

As any VCI advanced compliant interconnect, this component uses the MSB bits of the VCI ADDRESS field to route the command packets to the proper target, thanks to a routing table, implemented as a ROM. This routing table is build by the constructor from the informations stored in the mapping table.

2) Component definition and usage

source:trunk/soclib/soclib/module/network_component/vci_vgsb/caba/metadata/vci_vgsb.sd?

```
Uses( 'vci_vgsb' )
```

3) CABA Implementation

CABA sources

- interface : source:trunk/soclib/soclib/module/network_component/vci_vgsb/caba/source/include/vci_vgsb.h?
- implementation : source:trunk/soclib/soclib/module/network_component/vci_vgsb/caba/source/src/vci_vgsb.cpp?

CABA Constructor parameters

```
VciVgsb(
     sc_module_name name,                    //  instance name
     const soclib::common::MappingTable &mt, // mapping table
     size_t nb_initiator,                    // number of initiators
     size_t nb_target);                      // number of targets
```

CABA Ports

- sc_in<bool> **p_resetn** : Global system reset
- sc_in<bool> **p_clk** : Global system clock
- soclib::caba::VciTarget<vci_param> **p_from_initiator[]** : Ports from VCI initiators

- soclib::caba::VciInitiator<vci_param> **p_to_target[]** : Ports to VCI targets

4) TLM-T Implementation

Not available