VciMultiRam Functional Description

This VCI target is an embedded SRAM controller. This hardware component handles independent memory segments. Each segment is defined by a base address and a size (number of bytes). Both the base and the size parameters must be multiple of 4. The segments allocated to a given instance of this component are defined in the Mapping Table.

Each segment is implemented as a dynamically allocated array in the constructor.

A MultiRam will initialize its segments from a binary if an ElfLoader? is attached to it.

Component definition

Available in source:trunk/soclib/desc/soclib/vci_multi_ram.sd

Usage

VciMultiRam has no other parameter than VCI ones, it may be used like others, see SoclibCc/VciParameters

```
Uses( 'vci_multi_ram', **vci_parameters )
```

VciMultiRam CABA Implementation

The caba implementation is in

- source:trunk/soclib/systemc/include/caba/target/vci_multi_ram.h
- source:trunk/soclib/systemc/src/caba/target/vci_multi_ram.cc

Template parameters:

- The VCI parameters

Constructor parameters

- Elf-initialized MultiRam:

```
VciMultiRam(
     sc_module_name name,                     // Instance name
     const soclib::common::IntTab &index,     //  Target index
     const soclib::common::MappingTable &mt,  // Mapping Table
     soclib::common::ElfLoader &loader);
```

- Uninitialized MultiRam:

```
VciMultiRam(
     sc_module_name name,                     // Instance name
     const soclib::common::IntTab &index,     //  Target index
     const soclib::common::MappingTable &mt)  // Mapping Table
```

Ports

- sc_in<bool> **p_resetn** : Global system reset
- sc_in<bool> **p_clk** : Global system clock
- soclib::common::VciTarget<vci_param> **p_vci** : The VCI port

Usage

```
// You may create a loader, loading "a.out"
soclib::common::ElfLoader loader( "a.out" );

// You may create a MultiRam, using the loaded object
soclib::caba::VciMultiRam ram0( "ram0", soclib::common::IntTab(2), mapping_table, loader );
```

On reset, any loadable segment in ELF file will be loaded at matched location.