2 Multilevel supervisor

Folder 2 contains all the files regarding multilevel synthesis. Subfolder *Source_files* contains the plant and requirement model as described in Section 1, aswell as the files describing the clustering. Subfolder *Multilevel_supervisor* contains the multilevel supervisor.

2.1 Folder *Source_files*

The plant and requirement model are copied from Folder 1 and are, therefore, not discussed in this section. The file *Multilevel.tooldef2* can be used to run the CIF3mlsynth tool of CIF3, to acquire the files *sup prodsysmap_txt* and *sup.txt*, which contain the product system mapping, and the multilevel supervisor. The product system mapping is a mapping to the Most Refined Product System, the DMMs, and DSM are discussed in Section IV.

After clustering, the DSM the files *Ps.txt*, *Rs.txt*, and *T.txt* are created and used as input files for multilevel clustering in CIF3. *T.txt* contains the tree structure as shown in Figure 2.1. Note that this tree is different from the tree shown in Section V, this is the case because the model was adjusted such that the supervisor has finite response, confluence, and is non-blocking under control. This is discussed in Section VI. Moreover, note that the requirements are omitted in Figure 2.1, to keep the figure clear.

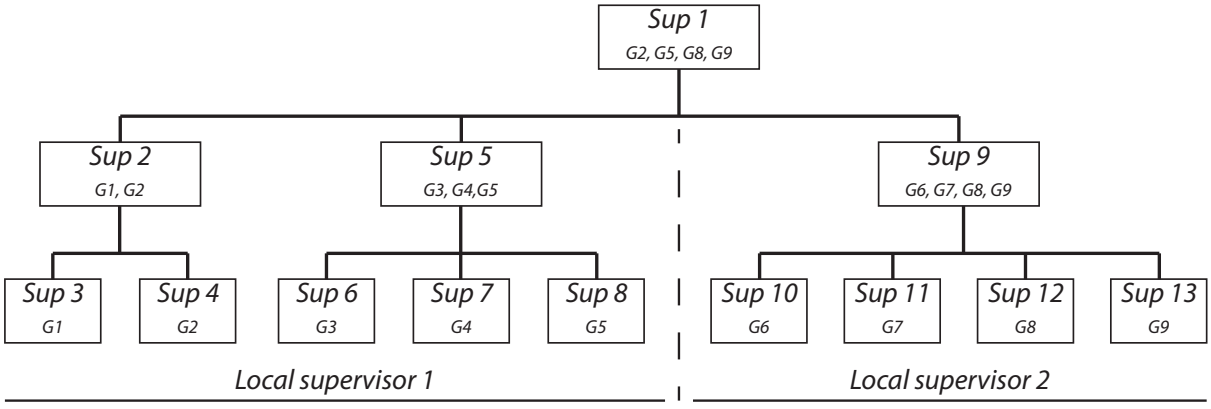

Figure 2.1: Tree structure for multilevel systhesis

2.2 Folder *Multilevel_supervisor*

This folder contains the multilevel supervisor, which is acquired using the CIF3 multilevel synthesis tool. Each of the supervisors in Figure 2.1 is given in a separate file, the set of all supervisors is given in the file s*up.cif*. The supervisors given in this folder are used for localization. Note that not all supervisors in the multilevel supervisor contain a supervisor automaton. *Sup*3 for example, only contains the automata of component $G1$, without any requirements. No supervisor automaton is needed in this case.