

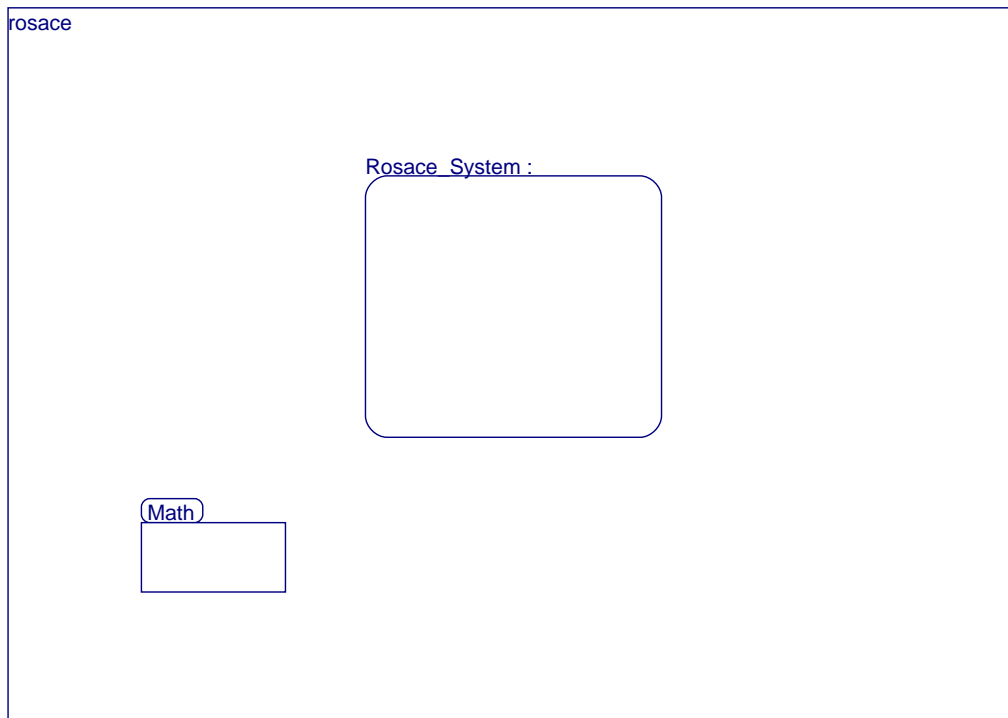
1. PROJECT

ROOT_OBJECTS

--|rosace\Rosace_System|--

END

1.1. AADL Diagram



2. SYSTEM Rosace_System IS

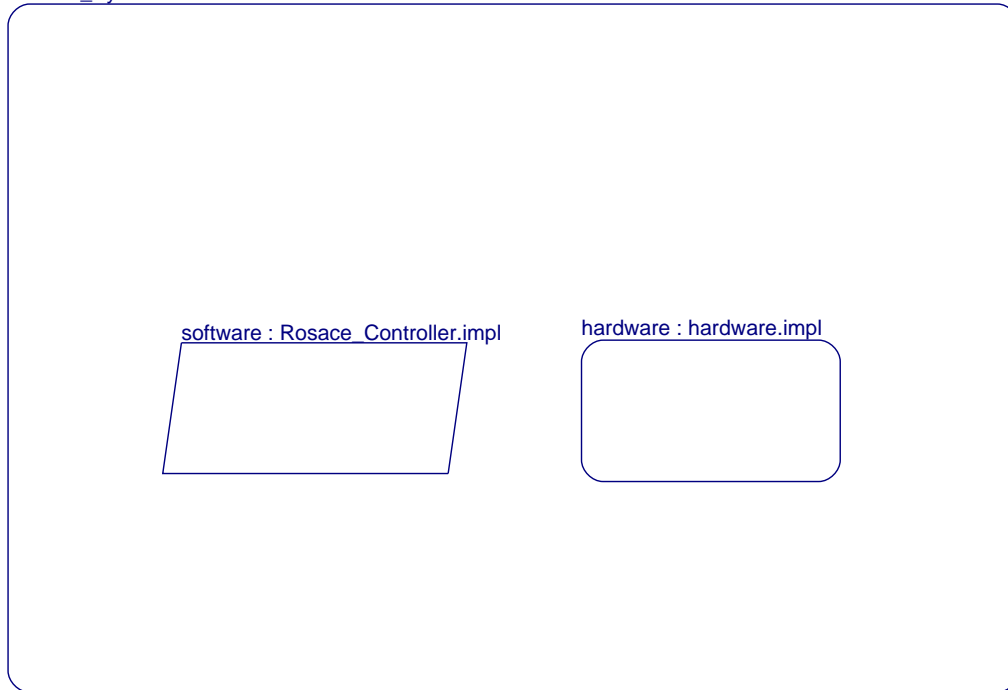
2.1. DESCRIPTION

2.1.1. PROBLEM

2.1.2. SOLUTION

2.1.2.1. AADL Diagram

Rosace_System :



2.2. TYPE

2.2.1. PROPERTIES

2.2.1.1. Predeclared Deployment Properties

2.2.1.2. Predeclared Timing Properties

2.3. IMPLEMENTATION

2.3.1. SUBCOMPONENTS

```
software;  
hardware;
```

2.3.2. PROPERTIES

2.3.2.1. User Defined Component Implementation Properties (aadl)

```
-- Processor #1 binding and priorities  
Actual_Processor_Binding => (reference (Hardware.cpu1)) applies to  
  Software.Environment.Engine,  
  Software.Environment.Elevator,  
  Software.Environment.Aircraft_Dynamics;  
Priority => 10 applies to Software.Environment.Engine;  
Priority => 9 applies to Software.Environment.Elevator;  
Priority => 5 applies to Software.Environment.Aircraft_Dynamics;  
-- Processor #2 binding and priorities  
Actual_Processor_Binding => (reference (Hardware.cpu2)) applies to  
  Software.Controller.H_filter,  
  Software.Controller.Az_filter,  
  Software.Controller.Vz_filter,  
  Software.Controller.Q_filter,  
  Software.Controller.Va_filter;
```

```

Priority => 10 applies to Software.Controller.H_filter;
Priority => 09 applies to Software.Controller.Az_filter;
Priority => 08 applies to Software.Controller.Vz_filter;
Priority => 07 applies to Software.Controller.Q_filter;
Priority => 06 applies to Software.Controller.Va_filter;
Dispatch_Offset => 500 us applies to
  Software.Controller.H_filter,
  Software.Controller.Az_filter,
  Software.Controller.Vz_filter,
  Software.Controller.Q_filter,
  Software.Controller.Va_filter;
-- Processor #3 binding and priorities
Actual_Processor_Binding => (reference (Hardware.cpu3)) applies to
  Software.Controller.Altitude_Hold,
  Software.Controller.Vz_Control,
  Software.Controller.Va_Control;
Priority => 10 applies to Software.Controller.Altitude_Hold;
Priority => 05 applies to Software.Controller.Vz_Control;
Priority => 04 applies to Software.Controller.Va_Control;
Dispatch_Offset => 1000 us applies to
  Software.Controller.Altitude_Hold,
  Software.Controller.Vz_Control,
  Software.Controller.Va_Control;
-- Processor #4 binding and priorities
Actual_Processor_Binding => (reference (Hardware.cpu4)) applies to
  Software.Monitoring;
Priority => 10 applies to Software.Monitoring;

```

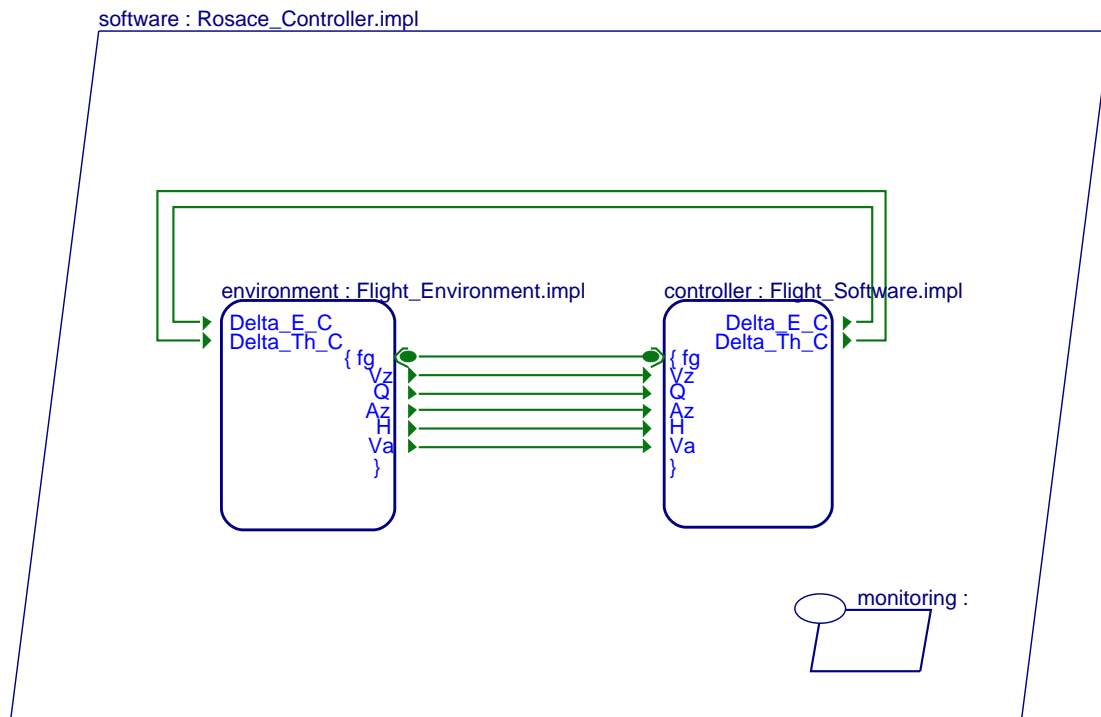
3. PROCESS software IS

3.1. DESCRIPTION

3.1.1. PROBLEM

3.1.2. SOLUTION

3.1.2.1. AADL Diagram



3.2. TYPE

3.2.1. PROPERTIES

3.2.1.1. Predeclared Deployment Properties

3.2.1.2. Predeclared Timing Properties

3.3. IMPLEMENTATION

3.3.1. SUBCOMPONENTS

```

environment;
controller;
monitoring;
  
```

3.3.2. PROPERTIES

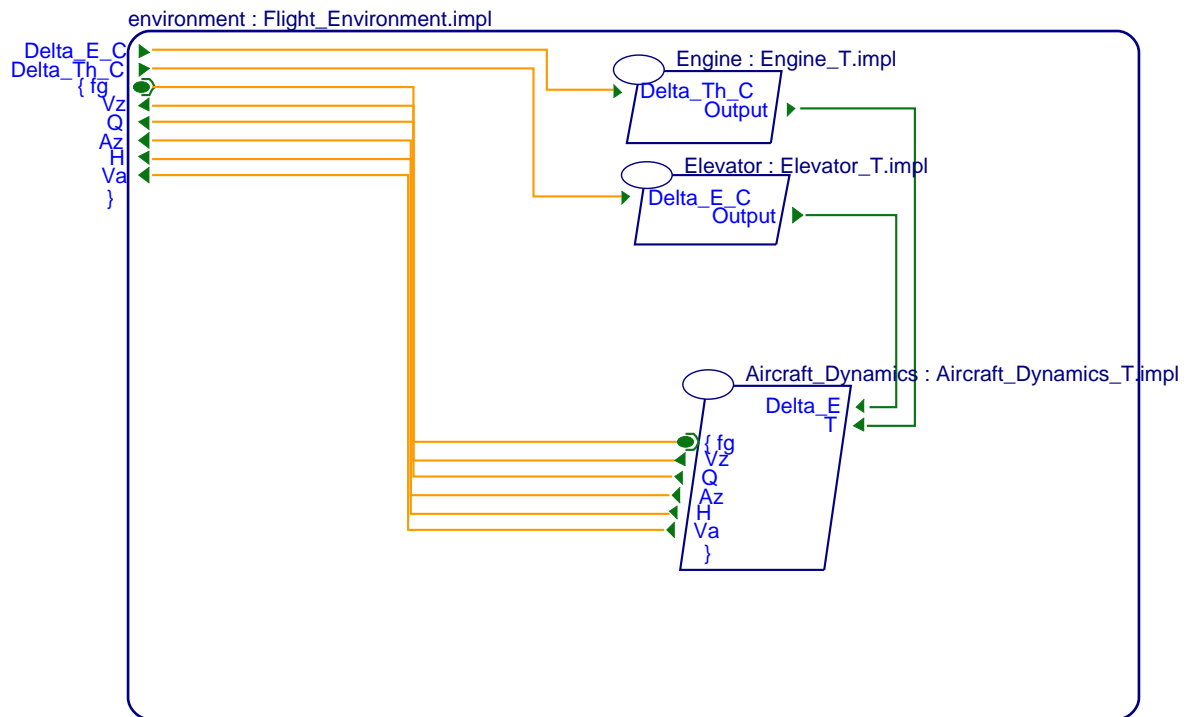
4. THREAD GROUP environment IS

4.1. DESCRIPTION

4.1.1. PROBLEM

4.1.2. SOLUTION

4.1.2.1. AADL Diagram



4.2. TYPE

4.2.1. PROPERTIES

4.2.1.1. Predeclared Deployment Properties

4.2.1.2. Predeclared Timing Properties

4.3. IMPLEMENTATION

4.3.1. SUBCOMPONENTS

```
Engine;
Elevator;
Aircraft_Dynamics;
```

4.3.2. PROPERTIES

5. THREAD Engine IS

5.1. DESCRIPTION

5.1.1. PROBLEM

5.1.2. SOLUTION

5.2. TYPE

5.2.1. PROPERTIES

5.2.1.1. Predeclared Deployment Properties

5.2.1.2. Predeclared Timing Properties

5.2.1.2.1. Compute_Execution_Time

1 us .. 100 us

5.2.1.2.2. Period

5000 us

5.3. IMPLEMENTATION

5.3.1. PROPERTIES

6. THREAD Elevator IS

6.1. DESCRIPTION

6.1.1. PROBLEM

6.1.2. SOLUTION

6.2. TYPE

6.2.1. PROPERTIES

6.2.1.1. Predeclared Deployment Properties

6.2.1.2. Predeclared Timing Properties

6.2.1.2.1. Compute_Execution_Time

1 us .. 100 us

6.2.1.2.2. Period

5000 us

6.3. IMPLEMENTATION

6.3.1. PROPERTIES

7. THREAD Aircraft_Dynamics IS

7.1. DESCRIPTION

7.1.1. PROBLEM

7.1.2. SOLUTION

7.2. TYPE

7.2.1. PROPERTIES

7.2.1.1. Predeclared Deployment Properties

7.2.1.2. Predeclared Timing Properties

7.2.1.2.1. Compute_Execution_Time

1 us .. 200 us

7.2.1.2.2. Period

5000 us

7.3. IMPLEMENTATION

7.3.1. PROPERTIES

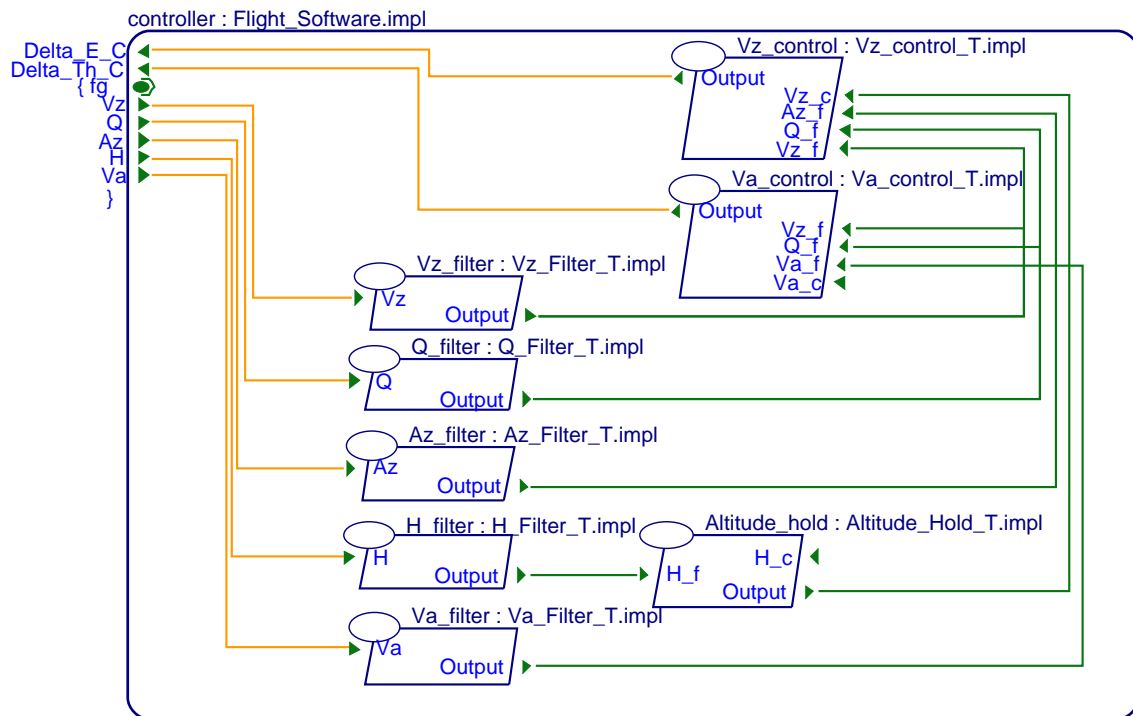
8. THREAD GROUP controller IS

8.1. DESCRIPTION

8.1.1. PROBLEM

8.1.2. SOLUTION

8.1.2.1. AADL Diagram



8.2. TYPE

8.2.1. PROPERTIES

8.2.1.1. Predeclared Deployment Properties

8.2.1.2. Predeclared Timing Properties

8.3. IMPLEMENTATION

8.3.1. SUBCOMPONENTS

H_filter;
Az_filter;
Vz_filter;
Q_filter;
Va_filter;
Altitude_hold;
Vz_control;
Va_control;

8.3.2. PROPERTIES

9. THREAD H_filter IS

9.1. DESCRIPTION

9.1.1. PROBLEM

9.1.2. SOLUTION

9.2. TYPE

9.2.1. PROPERTIES

9.2.1.1. Predeclared Deployment Properties

9.2.1.2. Predeclared Timing Properties

9.2.1.2.1. Compute_Execution_Time

1 us .. 100 us

9.2.1.2.2. Period

10000 us

9.3. IMPLEMENTATION

9.3.1. PROPERTIES

10. THREAD Az_filter IS

10.1. DESCRIPTION

10.1.1. PROBLEM

10.1.2. SOLUTION

10.2. TYPE

10.2.1. PROPERTIES

10.2.1.1. Predeclared Deployment Properties

10.2.1.2. Predeclared Timing Properties

10.2.1.2.1. Compute_Execution_Time

1 us .. 100 us

10.2.1.2.2. Period

10000 us

10.3. IMPLEMENTATION

10.3.1. PROPERTIES

11. THREAD Vz_filter IS

11.1. DESCRIPTION

11.1.1. PROBLEM

11.1.2. SOLUTION

11.2. TYPE

11.2.1. PROPERTIES

11.2.1.1. Predeclared Deployment Properties

11.2.1.2. Predeclared Timing Properties

11.2.1.2.1. Compute_Execution_Time

1 us .. 100 us

11.2.1.2.2. Period

10000 us

11.3. IMPLEMENTATION

11.3.1. PROPERTIES

12. THREAD Q_filter IS

12.1. DESCRIPTION

12.1.1. PROBLEM

12.1.2. SOLUTION

12.2. TYPE

12.2.1. PROPERTIES

12.2.1.1. Predeclared Deployment Properties

12.2.1.2. Predeclared Timing Properties

12.2.1.2.1. Compute_Execution_Time

1 us .. 100 us

12.2.1.2.2. Period

10000 us

12.3. IMPLEMENTATION

12.3.1. PROPERTIES

13. THREAD Va_filter IS

13.1. DESCRIPTION

13.1.1. PROBLEM

13.1.2. SOLUTION

13.2. TYPE

13.2.1. PROPERTIES

13.2.1.1. Predeclared Deployment Properties

13.2.1.2. Predeclared Timing Properties

13.2.1.2.1. Compute_Execution_Time

1 us .. 100 us

13.2.1.2.2. Period

10000 us

13.3. IMPLEMENTATION

13.3.1. PROPERTIES

14. THREAD Altitude_hold IS

14.1. DESCRIPTION

14.1.1. PROBLEM

14.1.2. SOLUTION

14.2. TYPE

14.2.1. PROPERTIES

14.2.1.1. Predeclared Deployment Properties

14.2.1.2. Predeclared Timing Properties

14.2.1.2.1. Compute_Execution_Time

1 us .. 100 us

14.2.1.2.2. Period

20000 us

14.3. IMPLEMENTATION

14.3.1. PROPERTIES

15. THREAD Vz_control IS

15.1. DESCRIPTION

15.1.1. PROBLEM

15.1.2. SOLUTION

15.2. TYPE

15.2.1. PROPERTIES

15.2.1.1. Predeclared Deployment Properties

15.2.1.2. Predeclared Timing Properties

15.2.1.2.1. Compute_Execution_Time

1 us .. 100 us

15.2.1.2.2. Period

20000 us

15.3. IMPLEMENTATION

15.3.1. PROPERTIES

16. THREAD Va_control IS

16.1. DESCRIPTION

16.1.1. PROBLEM

16.1.2. SOLUTION

16.2. TYPE

16.2.1. PROPERTIES

16.2.1.1. Predeclared Deployment Properties

16.2.1.2. Predeclared Timing Properties

16.2.1.2.1. Compute_Execution_Time

1 us .. 100 us

16.2.1.2.2. Period

20000 us

16.3. IMPLEMENTATION

16.3.1. PROPERTIES

17. THREAD monitoring IS

17.1. DESCRIPTION

17.1.1. PROBLEM

17.1.2. SOLUTION

17.2. TYPE

17.2.1. PROPERTIES

17.2.1.1. Predeclared Deployment Properties

17.2.1.2. Predeclared Timing Properties

17.2.1.2.1. Compute_Execution_Time

10us .. 10us

17.2.1.2.2. Period

10000 us

17.3. IMPLEMENTATION

17.3.1. PROPERTIES

18. SYSTEM hardware IS

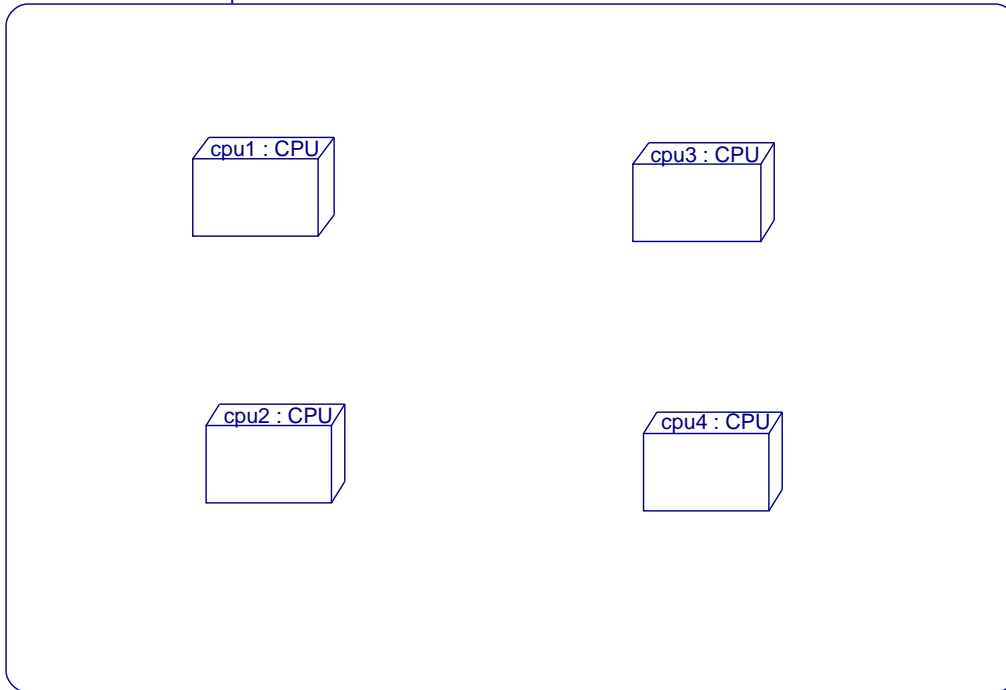
18.1. DESCRIPTION

18.1.1. PROBLEM

18.1.2. SOLUTION

18.1.2.1. AADL Diagram

hardware : hardware.impl



18.2. TYPE

18.2.1. PROPERTIES

18.2.1.1. Predeclared Deployment Properties

18.2.1.1.1. Scheduling_Protocol

(POSIX_1003_HIGHEST_PRIORITY_FIRST_PROTOCOL)

18.2.1.2. Predeclared Timing Properties

18.3. IMPLEMENTATION

18.3.1. SUBCOMPONENTS

```
cpu1;  
cpu2;  
cpu3;  
cpu4;
```

18.3.2. PROPERTIES

19. PROCESSOR cpu1 IS

19.1. DESCRIPTION

19.1.1. PROBLEM

19.1.2. SOLUTION

19.2. TYPE

19.2.1. PROPERTIES

19.2.1.1. Predeclared Deployment Properties

19.2.1.2. Predeclared Timing Properties

19.3. IMPLEMENTATION

19.3.1. PROPERTIES

20. PROCESSOR cpu2 IS

20.1. DESCRIPTION

20.1.1. PROBLEM

20.1.2. SOLUTION

20.2. TYPE

20.2.1. PROPERTIES

20.2.1.1. Predeclared Deployment Properties

20.2.1.2. Predeclared Timing Properties

20.3. IMPLEMENTATION

20.3.1. PROPERTIES

21. PROCESSOR cpu3 IS

21.1. DESCRIPTION

21.1.1. PROBLEM

21.1.2. SOLUTION

21.2. TYPE

21.2.1. PROPERTIES

21.2.1.1. Predeclared Deployment Properties

21.2.1.2. Predeclared Timing Properties

21.3. IMPLEMENTATION

21.3.1. PROPERTIES

22. PROCESSOR cpu4 IS

22.1. DESCRIPTION

22.1.1. PROBLEM

22.1.2. SOLUTION

22.2. TYPE

22.2.1. PROPERTIES

22.2.1.1. Predeclared Deployment Properties

22.2.1.2. Predeclared Timing Properties

22.3. IMPLEMENTATION

22.3.1. PROPERTIES