

# **Technical Report:**

## **Modelling for hardware and software deployment based on multiple properties selection**

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February 20, 2013

This technical report is an appendix to a paper Gaetana Sapienza, Ivica Crnkovic, Tiberiu Seceleanu, Modelling for hardware and software deployment based on multiple properties selection, 2012

The report contains (1) a full specification of a embedded component-based system model using in MultiPart approach, and (2) a full specification of the Wind Turbine controller model generated by Simulink.

The Metamodel documentation is automatically generated by using Enterprice Architect - Sparx Systems, version 10.0.

The Wind Turbine Simulink Model documentation is automatically generated by using Simulink Report Generator Toolboxes - MathWorks version 2012a

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# Model Documentation

## Model Detail

This document provides a complete overview of all element details. For simpler and more focused reports, simply copy this initial template and turn off the sections not required.

## Domain Objects

**Type:** **Package**  
**Status:** Proposed. Version 1.0. Phase 1.0.  
**Package:** Domain Model  
**Detail:** Created on 2005-11-19. Last modified on 2006-01-18  
**GUID:** {8DF21336-7C3B-4ab4-B977-F24F2EA1B7A7}

### Domain Objects - (Class diagram)

**Created By:** segasap on 2006-01-11  
**Last Modified:** 2013-02-20  
**Version:** 1.0. **Locked:** False  
**GUID:** {F0780C83-B292-4d52-96C6-51791C4049BA}

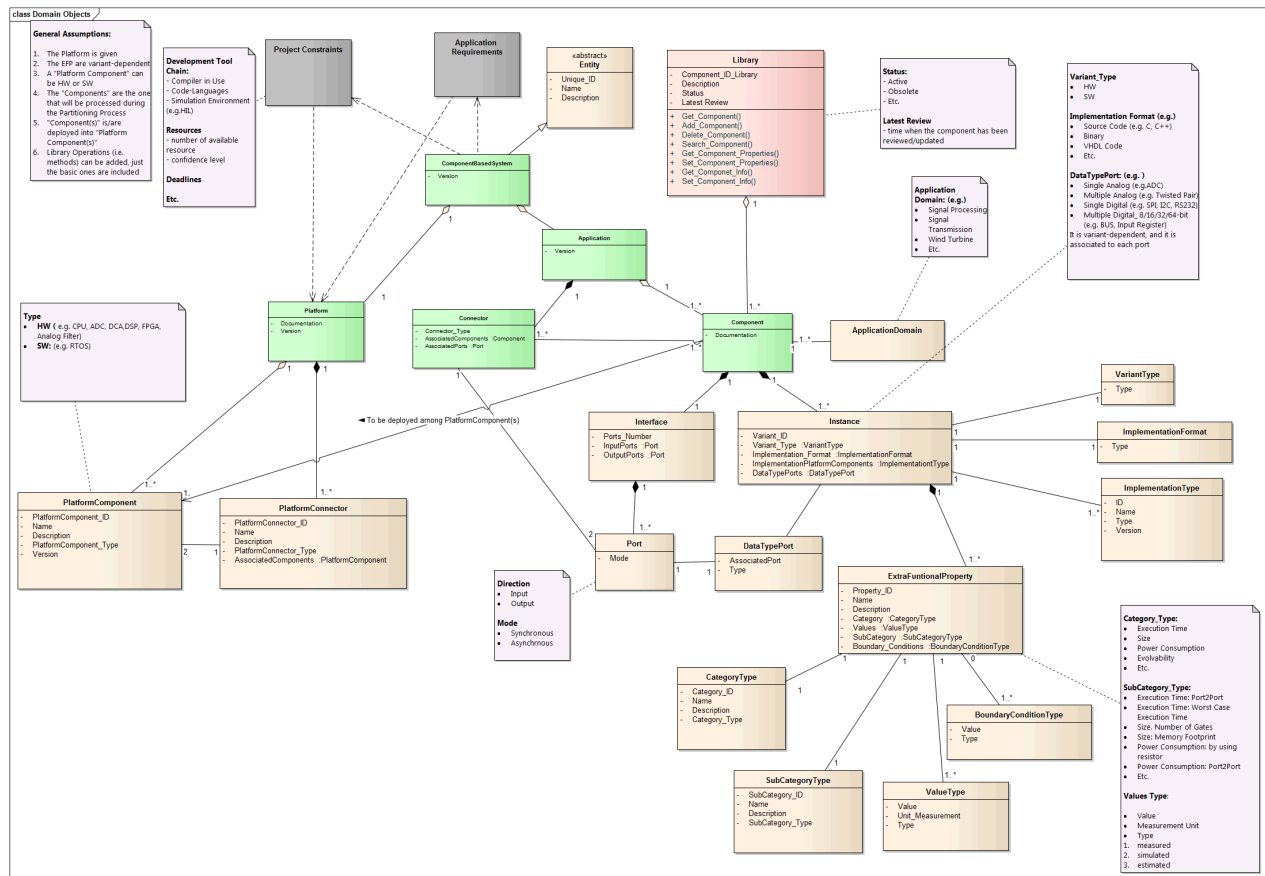


Figure: 1

## BSP

*Type:* **Class PlatformComponent**  
*Status:* Proposed. Version 1.0. Phase 1.0.  
*Package:* Domain Objects *Keywords:*  
*Detail:* Created on 2013-01-22. Last modified on 2013-01-22.  
*GUID:* {8FDB066E-6F50-46cb-98A8-FE37AC254714}

### Custom Properties

- isActive = False

### Connections

Connector	Source	Target	Notes
<b>Generalization</b> Source -> Destination	Public BSP	Public PlatformComponent	

## BoundaryConditionType

*Type:* **Class**  
*Status:* Proposed. Version 1.0. Phase 1.0.  
*Package:* Domain Objects *Keywords:*  
*Detail:* Created on 2013-01-31. Last modified on 2013-02-20.  
*GUID:* {E83BD901-4D8B-4b25-BEB4-E076A6EC2A7D}

### Custom Properties

- isActive = False

### Connections

Connector	Source	Target	Notes
<b>Association</b> Unspecified	Public BoundaryConditionType	Public ExtraFuntionalProperty	

### Attributes

Attribute	Notes	Constraints and tags
<b>Value</b> Private		<i>Default:</i>

Attribute	Notes	Constraints and tags
<b>Type</b> Private		<i>Default:</i>

## CategoryType

*Type:* **Class**

*Status:* Proposed. Version 1.0. Phase 1.0.

*Package:* Domain Objects *Keywords:*

*Detail:* Created on 2013-01-31. Last modified on 2013-01-31.

*GUID:* {EE8A2A87-3583-48f7-A525-039F2FD2D5ED}

### Custom Properties

- isActive = False

### Connections

Connector	Source	Target	Notes
<b>Association</b> Unspecified	Public CategoryType	Public ExtraFuntionalProperty	

### Attributes

Attribute	Notes	Constraints and tags
<b>Category_ID</b> Private		<i>Default:</i>
<b>Name</b> Private		<i>Default:</i>

Attribute	Notes	Constraints and tags
<b>Description</b> Private		<i>Default:</i>
<b>Category_Type</b> Private		<i>Default:</i>

## Class1

*Type:* **Class**  
*Status:* Proposed. Version 1.0. Phase 1.0.  
*Package:* Domain Objects *Keywords:*  
*Detail:* Created on 2013-02-20. Last modified on 2013-02-20.  
*GUID:* {0819D191-9412-4806-89E6-D50BDF57BEFC}

### Custom Properties

- isActive = False

### Connections

Connector	Source	Target	Notes
<b>Association</b> Unspecified	Public Connector	Public Class1	

## DataPort

*Type:* **Class**  
*Status:* Proposed. Version 1.0. Phase 1.0.  
*Package:* Domain Objects *Keywords:*  
*Detail:* Created on 2013-01-31. Last modified on 2013-02-20.  
*GUID:* {4E6B6358-146D-4952-9073-7F4B91D65CD7}

Custom Properties

- isActive = False

Connections

Connector	Source	Target	Notes
<b>Association</b> Unspecified	Public Port	Public DataTypePort	
<b>Association</b> Unspecified	Public DataTypePort	Public Instance	

Attributes

Attribute	Notes	Constraints and tags
<b>AssociatedPort</b> Private		<i>Default:</i>
<b>Type</b> Private		<i>Default:</i>

**Entity***Type:***Abstract***Status:*

Proposed. Version 1.0. Phase 1.0.

*Package:*Domain Objects *Keywords:**Detail:*

Created on 2013-02-01. Last modified on 2013-02-01.

*GUID:*

{00488ADC-C9B6-4ef5-A71E-11454A36CA55}

Custom Properties

- isActive = False



Connections

Connector	Source	Target	Notes
<b>Generalization</b> Source -> Destination	Public  ComponentBasedSystem	Public Entity	

Attributes

Attribute	Notes	Constraints and tags
<b>Unique_ID</b> Private		<i>Default:</i>
<b>Name</b> Private		<i>Default:</i>
<b>Description</b> Private		<i>Default:</i>

**ImplementationFormat**

**Type:** Class  
**Status:** Proposed. Version 1.0. Phase 1.0.  
**Package:** Domain Objects *Keywords:*  
**Detail:** Created on 2013-01-31. Last modified on 2013-02-20.  
**GUID:** {9E9D9F2D-8797-4d50-835E-B419A04F8B26}

Custom Properties

- isActive = False

Connections

Connector	Source	Target	Notes
<b>Association</b> Unspecified	Public ImplementationFormat	Public Instance	

Attributes

Attribute	Notes	Constraints and tags
<b>Type</b> Private		<i>Default:</i>

**ImplementationType**

*Type:* **Class**  
*Status:* Proposed. Version 1.0. Phase 1.0.  
*Package:* Domain Objects *Keywords:*  
*Detail:* Created on 2013-01-31. Last modified on 2013-02-20.  
*GUID:* {A95F739B-462F-45bd-BE77-25AA4B578C20}

Custom Properties

- isActive = False

Connections

Connector	Source	Target	Notes
<b>Association</b> Unspecified	Public ImplementationType	Public Instance	

Attributes

Attribute	Notes	Constraints and tags
<b>ID</b> Private		<i>Default:</i>
<b>Name</b>		<i>Default:</i>

Attribute	Notes	Constraints and tags
Private		
<b>Type</b> Private		<i>Default:</i>
<b>Version</b> Private		<i>Default:</i>

## SubCategoryType

*Type:* **Class**  
*Status:* Proposed. Version 1.0. Phase 1.0.  
*Package:* Domain Objects *Keywords:*  
*Detail:* Created on 2013-01-31. Last modified on 2013-02-20.  
*GUID:* {9ECCA960-99AB-4698-B94B-AA9ACE54C082}

### Custom Properties

- isActive = False

### Connections

Connector	Source	Target	Notes
<b>Association</b> Unspecified	Public SubCategoryType	Public ExtraFuntionalProperty	

### Attributes

Attribute	Notes	Constraints and tags
<b>SubCategory_ID</b> Private		<i>Default:</i>

Attribute	Notes	Constraints and tags
<b>Name</b> Private		<i>Default:</i>
<b>Description</b> Private		<i>Default:</i>
<b>SubCategory_Type</b> Private		<i>Default:</i>

## ValueType

*Type:* **Class**  
*Status:* Proposed. Version 1.0. Phase 1.0.  
*Package:* Domain Objects *Keywords:*  
*Detail:* Created on 2013-01-31. Last modified on 2013-01-31.  
*GUID:* {20D3C33B-EE3C-45dd-B7D7-707F9F2F52BC}

### Custom Properties

- isActive = False

### Connections

Connector	Source	Target	Notes
<b>Association</b> Unspecified	Public ValueType	Public ExtraFuntionalProperty	

Attributes

Attribute	Notes	Constraints and tags
<b>Value</b> Private		<i>Default:</i>
<b>Unit_Measurement</b> Private		<i>Default:</i>
<b>Type</b> Private		<i>Default:</i>

**VariantType**

*Type:* **Class**  
*Status:* Proposed. Version 1.0. Phase 1.0.  
*Package:* Domain Objects *Keywords:*  
*Detail:* Created on 2013-01-31. Last modified on 2013-02-20.  
*GUID:* {00FE0908-E5BA-475b-AD43-0754D6B58B66}

Custom Properties

- isActive = False

Connections

Connector	Source	Target	Notes
<b>Association</b> Unspecified	Public VariantType	Public Instance	

Attributes

Attribute	Notes	Constraints and tags
<b>Type</b> Private		<i>Default:</i>

## Application

*Type:* **Class**  
*Status:* Proposed. Version 1.0. Phase 1.0.  
*Package:* Domain Objects *Keywords:*  
*Detail:* Created on 2013-02-20. Last modified on 2013-02-20.  
*GUID:* {A7AF6EB3-B67D-46f6-9AD3-11CBE32465FF}

### Custom Properties

- isActive = False

### Connections

Connector	Source	Target	Notes
<b>Aggregation</b> Source -> Destination	Public Component	Public Application	
<b>Aggregation</b> Source -> Destination	Public Connector	Public Application	
<b>Aggregation</b> Source -> Destination	Public Application	Public  ComponentBasedSystem	

### Attributes

Attribute	Notes	Constraints and tags
<b>Version</b> Private		<i>Default:</i>

## Interface1

*Type:* **Interface**  
*Status:* Proposed. Version 1.0. Phase 1.0.  
*Package:* Domain Objects *Keywords:*  
*Detail:* Created on 2013-01-31. Last modified on 2013-01-31.  
*GUID:* {CD930C4F-6A3F-4bb9-B3FE-5A38694FB1AE}

## Data Type1

*Type:* **Data Type**  
*Status:* Proposed. Version 1.0. Phase 1.0.  
*Package:* Domain Objects *Keywords:*  
*Detail:* Created on 2013-01-31. Last modified on 2013-01-31.  
*GUID:* {89867B8B-3D7E-405f-8817-BDFEBEF81A0B}

## Application Requirements

*Type:* **Package**  
*Status:* Proposed. Version 1.0. Phase 1.0.  
*Package:* Domain Objects  
*Detail:* Created on 2013-01-11. Last modified on 2013-01-11  
*GUID:* {69D40BE4-FACB-4b3b-B7C7-93279BB2AC68}

## Application Requirements

*Type:* **Class**  
*Status:* Proposed. Version 1.0. Phase 1.0.  
*Package:* Application Requirements *Keywords:*  
*Detail:* Created on 2012-12-19. Last modified on 2013-02-20.  
*GUID:* {F8FF1EB1-D555-4f08-90BB-8A37E7F9469F}

### Custom Properties

- isActive = False

### Connections

Connector	Source	Target	Notes
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Connector	Source	Target	Notes
<b>Dependency</b> Source -> Destination	Public ComponentBasedSystem	Public Application Requirements	
<b>Dependency</b> Source -> Destination	Public Application Requirements	Public Platform	

## Component-Based System

**Type:** **Package**  
**Status:** Proposed. Version 1.0. Phase 1.0.  
**Package:** Domain Objects  
**Detail:** Created on 2013-01-11. Last modified on 2013-01-11  
**GUID:** {8CAD441B-C979-4e0c-A6D6-6099783D7948}

## ComponentBasedSystem

**Type:** **Class Entity**  
**Status:** Proposed. Version 1.0. Phase 1.0.  
**Package:** Component-Based System *Keywords:*  
**Detail:** Created on 2006-01-11. Last modified on 2013-01-31.  
**GUID:** {3C3614D1-D37E-445d-A800-BDF6F177DBB0}

### Custom Properties

- isActive = False

### Connections

Connector	Source	Target	Notes
<b>Aggregation</b> Source -> Destination	Public Platform	Public ComponentBasedSystem	
<b>Dependency</b> Destination -> Source	Public Project Constraints	Public ComponentBasedSystem	
<b>Dependency</b> Source -> Destination	Public ComponentBasedSystem	Public Application Requirements	



Connector	Source	Target	Notes
<b>Generalization</b> Source -> Destination	Public ComponentBasedSystem	Public Entity	
<b>Aggregation</b> Source -> Destination	Public Application	Public ComponentBasedSystem	

### Attributes

Attribute	Notes	Constraints and tags
<b>Version</b> Private		<i>Default:</i>

## Components

**Type:** **Package**  
**Status:** Proposed. Version 1.0. Phase 1.0.  
**Package:** Domain Objects  
**Detail:** Created on 2013-01-11. Last modified on 2013-01-11  
**GUID:** {5AA4CDE9-9D7F-4d18-B468-FB7B492CF973}

## ApplicationDomain

**Type:** **Class**  
**Status:** Proposed. Version 1.0. Phase 1.0.  
**Package:** Components **Keywords:**  
**Detail:** Created on 2013-01-21. Last modified on 2013-02-20.  
**GUID:** {C604C8AE-8C8D-461d-B85C-976EA60E2A81}

### Custom Properties

- isActive = False

### Connections

Connector	Source	Target	Notes
<b>NoteLink</b>	Public	Public	

Connector	Source	Target	Notes
Source -> Destination	ApplicationDomain	<anonymous>	
<b>Association</b> Unspecified	Public Component	Public ApplicationDomain	

## Type

**Type:** **Class**  
**Status:** Proposed. Version 1.0. Phase 1.0.  
**Package:** Components *Keywords:*  
**Detail:** Created on 2013-01-21. Last modified on 2013-01-21.  
**GUID:** {DAB25D65-CCA9-4b3f-8B84-292A5B3FAE7F}

### Custom Properties

- isActive = False

### Connections

Connector	Source	Target	Notes
<b>Association</b> Unspecified	Public Component	Public Type	

## Component

**Type:** **Class**  
**Status:** Proposed. Version 1.0. Phase 1.0.  
**Package:** Components *Keywords:*  
**Detail:** Created on 2006-01-11. Last modified on 2013-01-21.  
**GUID:** {8178331B-F953-4ce8-BD98-73A6C0569B79}

### Custom Properties

- isActive = False

### Connections

Connector	Source	Target	Notes
<b>Aggregation</b> Source -> Destination	Public Interface	Public Component	
<b>Aggregation</b>	Public	Public	

Connector	Source	Target	Notes
Source -> Destination	Instance	Component	
<b>Aggregation</b> Source -> Destination	Public Component	Public Application	
<b>Aggregation</b> Source -> Destination	Public Component	Public Library	
<b>Association</b> Unspecified	Public Component	Public ApplicationDomain	
<b>Association</b> Unspecified	Public Component	Public Type	
<b>Association</b> Unspecified	Public Connector	Public Component	
<b>Association</b> To be deployed among PlatformComponent(s) Destination -> Source	Public PlatformComponent	Public Component	

### Attributes

Attribute	Notes	Constraints and tags
<b>Documentation</b> Private		<i>Default:</i>

## Functional Properties

**Type:** **Package**  
**Status:** Proposed. Version 1.0. Phase 1.0.  
**Package:** Components  
**Detail:** Created on 2013-01-11. Last modified on 2013-01-11  
**GUID:** {9C1A3F1D-34BD-4f7a-9AF9-6C0D2B8F6FB1}

## Interface

**Type:** **Class**  
**Status:** Proposed. Version 1.0. Phase 1.0.  
**Package:** Functional Properties **Keywords:**  
**Detail:** Created on 2006-01-11. Last modified on 2013-02-20.  
**GUID:** {6CCC4BC8-2BDF-42fc-AEDE-9AA6E2DAAF22}

Custom Properties

- isActive = False

Connections

Connector	Source	Target	Notes
<b>Aggregation</b> Source -> Destination	Public Interface	Public Component	
<b>Aggregation</b> Source -> Destination	Public Port	Public Interface	

Attributes

Attribute	Notes	Constraints and tags
<b>Ports_Number</b> Private		<i>Default:</i>
<b>InputPorts</b> Port Private		<i>Default:</i>
<b>OutputPorts</b> Port Private		<i>Default:</i>

Port*Type:**Status:**Package:**Detail:**GUID:***Class**

Proposed. Version 1.0. Phase 1.0.

Functional Properties *Keywords:*

Created on 2012-12-18. Last modified on 2013-01-18.

{D5A7FD83-D4C5-4427-90FD-EE0890ED4093}

Custom Properties

- isActive = False

Connections

Connector	Source	Target	Notes
<b>Aggregation</b> Source -> Destination	Public Port	Public Interface	
<b>NoteLink</b> Source -> Destination	Public <anonymous>	Public Port	
<b>Association</b> Unspecified	Public Connector	Public Port	
<b>Association</b> Unspecified	Public Port	Public DataTypePort	

Attributes

Attribute	Notes	Constraints and tags
<b>Mode</b> Private		<i>Default:</i>

**Variant**

*Type:* **Package**  
*Status:* Proposed. Version 1.0. Phase 1.0.  
*Package:* Components  
*Detail:* Created on 2013-01-11. Last modified on 2013-01-11  
*GUID:* {7C0358FA-477E-475d-8773-03E784690D43}

**Memory FootPrint (SW)**

*Type:* **Class**  
*Status:* Proposed. Version 1.0. Phase 1.0.  
*Package:* Variant *Keywords:*  
*Detail:* Created on 2013-01-17. Last modified on 2013-01-18.  
*GUID:* {F3DF6B11-3822-4813-B313-E375A98A3AA1}

Custom Properties

- isActive = False

Connections

Connector	Source	Target	Notes
<u>Association</u> Unspecified	Public Memory FootPrint (SW)	Public Size	

Attributes

Attribute	Notes	Constraints and tags
<b>measured_value</b> Private		<i>Default:</i>
<b>simulated_value</b> Private		<i>Default:</i>
<b>estimated_value</b> Private		<i>Default:</i>
<b>unit_of_measurement/range_of_measurement</b> Private		<i>Default:</i>
<b>boundary_conditions</b> Private		<i>Default:</i>

Attribute	Notes	Constraints and tags
<b>description</b> Private		<i>Default:</i>
<b>specific for (HW, SW, HW/SW)</b> Private		<i>Default:</i>

## Size

**Type:** Class  
**Status:** Proposed. Version 1.0. Phase 1.0.  
**Package:** Variant *Keywords:*  
**Detail:** Created on 2013-01-17. Last modified on 2013-01-18.  
**GUID:** {FFFE88D2-2094-4760-979C-2707FF3EFB23}

### Custom Properties

- isActive = False

### Connections

Connector	Source	Target	Notes
<b>Association</b> Unspecified	Public Size	Public ExtraFuntionalProperty	
<b>Association</b> Unspecified	Public Memory FootPrint (SW)	Public Size	

## ExtraFuntionalProperty

**Type:** Class

*Status:* Proposed. Version 1.0. Phase 1.0.  
*Package:* Variant *Keywords:*  
*Detail:* Created on 2012-12-18. Last modified on 2013-01-21.  
*GUID:* {74F7235A-4622-45ef-BA49-6B3BDFFF3328}

### Custom Properties

- isActive = False

### Connections

Connector	Source	Target	Notes
<b>Aggregation</b> Source -> Destination	Public ExtraFuntionalProperty	Public Instance	
<b>Association</b> Unspecified	Public ExtraFuntionalProperty	Public Execution Time Type	
<b>Association</b> Unspecified	Public ExtraFuntionalProperty	Public New Extra-Functional Property/ies Type	
<b>Association</b> Unspecified	Public Power Consumption Type	Public ExtraFuntionalProperty	
<b>Association</b> Unspecified	Public Size	Public ExtraFuntionalProperty	
<b>NoteLink</b> Source -> Destination	Public <anonymous>	Public ExtraFuntionalProperty	
<b>Association</b> Unspecified	Public ValueType	Public ExtraFuntionalProperty	
<b>Association</b> Unspecified	Public CategoryType	Public ExtraFuntionalProperty	
<b>Association</b> Unspecified	Public SubCategoryType	Public ExtraFuntionalProperty	
<b>Association</b> Unspecified	Public BoundaryConditionType	Public ExtraFuntionalProperty	

### Attributes

Attribute	Notes	Constraints and tags
<b>Property_ID</b> Private		<i>Default:</i>



Attribute	Notes	Constraints and tags
<b>Name</b> Private		<i>Default:</i>
<b>Description</b> Private		<i>Default:</i>
<b>Category</b> CategoryType Private		<i>Default:</i>
<b>Values</b> ValueType Private		<i>Default:</i>
<b>SubCategory</b> SubCategoryType Private		<i>Default:</i>
<b>Boundary_Conditions</b> BoundaryConditionType Private		<i>Default:</i>

## Instance

**Type:** **Class**  
**Status:** Proposed. Version 1.0. Phase 1.0.  
**Package:** Variant **Keywords:**  
**Detail:** Created on 2012-12-18. Last modified on 2013-02-20.  
**GUID:** {8B8B19F4-A2A3-4713-B92F-41F7FF95B6B7}

### Custom Properties

- isActive = False

### Connections

Connector	Source	Target	Notes
<b>Aggregation</b> Source -> Destination	Public ExtraFuntionalProperty	Public Instance	
<b>Aggregation</b> Source -> Destination	Public Instance	Public Component	
<b>NoteLink</b> Source -> Destination	Public Instance	Public <anonymous>	
<b>Association</b> Unspecified	Public VariantType	Public Instance	
<b>Association</b> Unspecified	Public ImplementationFormat	Public Instance	
<b>Association</b> Unspecified	Public DataTypePort	Public Instance	
<b>Association</b> Unspecified	Public ImplementationType	Public Instance	

### Attributes

Attribute	Notes	Constraints and tags
<b>Variant_ID</b> Private		<i>Default:</i>
<b>Variant_Type</b> VariantType		<i>Default:</i>

Attribute	Notes	Constraints and tags
Private		
<b>Implementation_Format</b> ImplementationFormat Private		<i>Default:</i>
<b>ImplementationPlatform Components</b> ImplementationType Private		<i>Default:</i>
<b>DataTypePorts</b> DataTypePort Private		<i>Default:</i>

### Extra-Functional Properties

**Type:** **Package**  
**Status:** Proposed. Version 1.0. Phase 1.0.  
**Package:** Variant  
**Detail:** Created on 2013-01-11. Last modified on 2013-01-11  
**GUID:** {00CB1F71-3079-4bc1-B9C7-5E529C780851}

### InputPort2OutPort (SubType)

**Type:** **Class Execution Time Type**  
**Status:** Proposed. Version 1.0. Phase 1.0.  
**Package:** Extra-Functional Properties *Keywords:*  
**Detail:** Created on 2013-01-17. Last modified on 2013-01-17.  
**GUID:** {C1ADED7F-80AE-4046-A89A-1BC6071B8C30}

Custom Properties

- isActive = False

Connections

Connector	Source	Target	Notes
<b>Generalization</b> Source -> Destination	Public InputPort2OutPort (SubType)	Public Execution Time Type	
<b>Association</b> Unspecified	Public InputPort2OutPort (SubType)	Public Execution Time Type	

Attributes

Attribute	Notes	Constraints and tags
<b>measured_value</b> Private		<i>Default:</i>
<b>simulated_value</b> Private		<i>Default:</i>
<b>estimated_value</b> Private		<i>Default:</i>
<b>unit of measurement</b> Private		<i>Default:</i>
<b>description</b> Private		<i>Default:</i>

Attribute	Notes	Constraints and tags
<b>boundary_conditions</b> Private		<i>Default:</i>
<b>specific for: (HW,SW, HW/SW)</b> Private		<i>Default:</i>

### New Sub\_Type of Execution Time

**Type:** **Class**  
**Status:** Proposed. Version 1.0. Phase 1.0.  
**Package:** Extra-Functional Properties *Keywords:*  
**Detail:** Created on 2013-01-17. Last modified on 2013-01-17.  
**GUID:** {63A44159-2988-42b4-948E-5BF89C99BD14}

#### Custom Properties

- isActive = False

#### Connections

Connector	Source	Target	Notes
<b>Association</b> Unspecified	Public New Sub_Type of Execution Time	Public Execution Time Type	

### WCET(SubType)

**Type:** **Class**  
**Status:** Proposed. Version 1.0. Phase 1.0.  
**Package:** Extra-Functional Properties *Keywords:*  
**Detail:** Created on 2013-01-17. Last modified on 2013-01-17.

**GUID:** {44A45302-4FEF-42cb-B1A5-B098BD2F4355}

### Custom Properties

- isActive = False

### Connections

Connector	Source	Target	Notes
<b>Association</b> Unspecified	Public WCET(SubType)	Public Execution Time Type	

## Execution Time Type

**Type:** **Class**

**Status:** Proposed. Version 1.0. Phase 1.0.

**Package:** Extra-Functional Properties **Keywords:**

**Detail:** Created on 2012-12-18. Last modified on 2013-01-17.

**GUID:** {F2529BD1-0840-4f1f-BE4E-1A7176F8197A}

### Custom Properties

- isActive = False

### Connections

Connector	Source	Target	Notes
<b>Association</b> Unspecified	Public ExtraFuntionalProperty	Public Execution Time Type	
<b>Generalization</b> Source -> Destination	Public InputPort2OutPort (SubType)	Public Execution Time Type	
<b>Association</b> Unspecified	Public InputPort2OutPort (SubType)	Public Execution Time Type	
<b>Association</b> Unspecified	Public WCET(SubType)	Public Execution Time Type	
<b>Association</b> Unspecified	Public New Sub_Type of Execution Time	Public Execution Time Type	

## New Extra-Functional Property/ies Type

**Type:** **Class**  
**Status:** Proposed. Version 1.0. Phase 1.0.  
**Package:** Extra-Functional Properties *Keywords:*  
**Detail:** Created on 2013-01-03. Last modified on 2013-01-17.  
**GUID:** {5DA5A09D-E5A8-4fbc-AA7E-919335E7E354}

### Custom Properties

- isActive = False

### Connections

Connector	Source	Target	Notes
<u>Association</u> Unspecified	Public ExtraFuntionalProperty	Public New Extra-Functional Property/ies Type	

## Power Consumption Type

**Type:** **Class**  
**Status:** Proposed. Version 1.0. Phase 1.0.  
**Package:** Extra-Functional Properties *Keywords:*  
**Detail:** Created on 2013-01-11. Last modified on 2013-01-17.  
**GUID:** {FC910D57-29BF-4624-A7C4-08D5C270C2A7}

### Custom Properties

- isActive = False

### Connections

Connector	Source	Target	Notes
<u>Association</u> Unspecified	Public Power Consumption Type	Public ExtraFuntionalProperty	

## Connectors

**Type:** **Package**

*Status:* Proposed. Version 1.0. Phase 1.0.  
*Package:* Domain Objects  
*Detail:* Created on 2013-01-11. Last modified on 2013-01-11  
*GUID:* {D74D34B0-2720-4407-84F6-B90C50FDC6E9}

## Connector

*Type:* **Class**  
*Status:* Proposed. Version 1.0. Phase 1.0.  
*Package:* Connectors *Keywords:*  
*Detail:* Created on 2012-12-18. Last modified on 2013-01-21.  
*GUID:* {39A2599C-652C-427d-AC2A-A2A516E82539}

### Custom Properties

- isActive = False

### Connections

Connector	Source	Target	Notes
<b>Aggregation</b> Source -> Destination	Public Connector	Public Application	
<b>Association</b> Unspecified	Public Connector	Public Port	
<b>Association</b> Unspecified	Public Connector	Public Class1	
<b>Association</b> Unspecified	Public Connector	Public Component	

### Attributes

Attribute	Notes	Constraints and tags
<b>Connector_Type</b> Private		<i>Default:</i>
<b>AssociatedComponents</b> Component Private		<i>Default:</i>



Attribute	Notes	Constraints and tags
<b>AssociatedPorts</b> Port Private		<i>Default:</i>

## Library

*Type:* **Package**  
*Status:* Proposed. Version 1.0. Phase 1.0.  
*Package:* Domain Objects  
*Detail:* Created on 2013-01-11. Last modified on 2013-01-11  
*GUID:* {EFABB36A-1754-4a20-AF0C-9E21804AF43D}

## Library

*Type:* **Class**  
*Status:* Proposed. Version 1.0. Phase 1.0.  
*Package:* Library *Keywords:*  
*Detail:* Created on 2012-12-19. Last modified on 2013-01-11.  
*GUID:* {DE911F3F-77A2-4bad-B4D3-B45FB53C82A9}

### Custom Properties

- isActive = False

### Connections

Connector	Source	Target	Notes
<b>Aggregation</b> Source -> Destination	Public Component	Public Library	
<b>NoteLink</b> Source -> Destination	Public Library	Public <anonymous>	

### Attributes

Attribute	Notes	Constraints and tags
<b>Component_ID_Library</b> Private		<i>Default:</i>

Attribute	Notes	Constraints and tags
<b>Description</b> Private		<i>Default:</i>
<b>Status</b> Private		<i>Default:</i>
<b>Latest Review</b> Private		<i>Default:</i>

### *Operations*

Method	Notes	Parameters
<b>Get_Component()</b> Public		
<b>Add_Component()</b> Public		
<b>Delete_Component()</b> Public		
<b>Search_Component()</b> Public		
<b>Get_Component_Properties()</b> Public		
<b>Set_Component_Properties()</b> Public		
<b>Get_Componet_Info()</b> Public		
<b>Set_Component_Info()</b> Public		

## Platform

**Type:** **Package**  
**Status:** Proposed. Version 1.0. Phase 1.0.  
**Package:** Domain Objects  
**Detail:** Created on 2013-01-11. Last modified on 2013-01-11  
**GUID:** {F734CB38-A7F1-4b08-9C7B-E2E6649429D4}

## Platform

**Type:** **Class**  
**Status:** Proposed. Version 1.0. Phase 1.0.  
**Package:** Platform **Keywords:**  
**Detail:** Created on 2012-12-19. Last modified on 2013-01-21.  
**GUID:** {EA9D6B02-03C7-49c3-BCC3-4B5EC728DFE3}

### Custom Properties

- isActive = False

### Connections

Connector	Source	Target	Notes
<b>Aggregation</b> Source -> Destination	Public Platform	Public  ComponentBasedSystem	
<b>Aggregation</b> Source -> Destination	Public PlatformConnector	Public Platform	
<b>Aggregation</b> Source -> Destination	Public PlatformComponent	Public Platform	
<b>Dependency</b> Source -> Destination	Public Project Constraints	Public Platform	
<b>Dependency</b> Source -> Destination	Public Application Requirements	Public Platform	

### Attributes

Attribute	Notes	Constraints and tags
<b>Documentation</b> Private		<i>Default:</i>

Attribute	Notes	Constraints and tags
<b>Version</b> Private		<i>Default:</i>

## Platform Components

*Type:* **Package**  
*Status:* Proposed. Version 1.0. Phase 1.0.  
*Package:* Platform  
*Detail:* Created on 2013-01-11. Last modified on 2013-01-11  
*GUID:* {8427ABE8-361D-4b3a-A859-C41BD74657FB}

## Analog Filter

*Type:* **Class PlatformComponent**  
*Status:* Proposed. Version 1.0. Phase 1.0.  
*Package:* Platform Components *Keywords:*  
*Detail:* Created on 2013-01-21. Last modified on 2013-01-21.  
*GUID:* {D80E7DF8-EE4B-4f7d-A90B-00D887645F2A}

### Custom Properties

- isActive = False

### Connections

Connector	Source	Target	Notes
<b>Generalization</b> Source -> Destination	Public Analog Filter	Public PlatformComponent	

## CPU

*Type:* **Class PlatformComponent**  
*Status:* Proposed. Version 1.0. Phase 1.0.  
*Package:* Platform Components *Keywords:*  
*Detail:* Created on 2013-01-21. Last modified on 2013-01-21.  
*GUID:* {456FD980-F6D1-4943-B198-7B52C10DE0A9}

Custom Properties

- isActive = False

Connections

Connector	Source	Target	Notes
<b>Generalization</b> Source -> Destination	Public CPU	Public PlatformComponent	

Driver

*Type:* **Class PlatformComponent**  
*Status:* Proposed. Version 1.0. Phase 1.0.  
*Package:* Platform Components *Keywords:*  
*Detail:* Created on 2013-01-21. Last modified on 2013-01-21.  
*GUID:* {B76887C3-2295-4b11-B35D-6465577F5766}

Custom Properties

- isActive = False

Connections

Connector	Source	Target	Notes
<b>Generalization</b> Source -> Destination	Public Driver	Public PlatformComponent	

FPGA

*Type:* **Class PlatformComponent**  
*Status:* Proposed. Version 1.0. Phase 1.0.  
*Package:* Platform Components *Keywords:*  
*Detail:* Created on 2013-01-21. Last modified on 2013-01-21.  
*GUID:* {7AAC5911-8F0A-4001-A911-3CE53771963D}

Custom Properties

- isActive = False

Connections

Connector	Source	Target	Notes
<b>Generalization</b> Source -> Destination	Public FPGA	Public PlatformComponent	

RTOS

*Type:* **Class PlatformComponent**  
*Status:* Proposed. Version 1.0. Phase 1.0.  
*Package:* Platform Components *Keywords:*  
*Detail:* Created on 2013-01-21. Last modified on 2013-01-21.  
*GUID:* {6F3C941F-EB98-43f0-942C-D20BCD7E5BEC}

Custom Properties

- isActive = False

Connections

Connector	Source	Target	Notes
<b>Generalization</b> Source -> Destination	Public RTOS	Public PlatformComponent	

PlatformComponent

*Type:* **Class**  
*Status:* Proposed. Version 1.0. Phase 1.0.  
*Package:* Platform Components *Keywords:*  
*Detail:* Created on 2012-12-19. Last modified on 2013-02-20.  
*GUID:* {B7FDCD56-DD7B-4099-9A8C-08C5D0DD69E3}

Custom Properties

- isActive = False

Connections

Connector	Source	Target	Notes
<b>Aggregation</b> Source -> Destination	Public PlatformComponent	Public Platform	

Connector	Source	Target	Notes
<b>NoteLink</b> Source -> Destination	Public PlatformComponent	Public <anonymous>	
<b>Association</b> Unspecified	Public PlatformComponent	Public PlatformConnector	
<b>Generalization</b> Source -> Destination	Public RTOS	Public PlatformComponent	
<b>Generalization</b> Source -> Destination	Public CPU	Public PlatformComponent	
<b>Generalization</b> Source -> Destination	Public Driver	Public PlatformComponent	
<b>Generalization</b> Source -> Destination	Public FPGA	Public PlatformComponent	
<b>Generalization</b> Source -> Destination	Public Analog Filter	Public PlatformComponent	
<b>Generalization</b> Source -> Destination	Public BSP	Public PlatformComponent	
<b>Association</b> To be deployed among PlatformComponent(s) Destination -> Source	Public PlatformComponent	Public Component	

### Attributes

Attribute	Notes	Constraints and tags
<b>PlatformComponent_ID</b> Private		<i>Default:</i>
<b>Name</b> Private		<i>Default:</i>
<b>Description</b> Private		<i>Default:</i>

Attribute	Notes	Constraints and tags
<b>PlatformComponent_Type</b> Private		<i>Default:</i>
<b>Version</b> Private		<i>Default:</i>

## Platform Connector

*Type:* **Package**  
*Status:* Proposed. Version 1.0. Phase 1.0.  
*Package:* Platform  
*Detail:* Created on 2013-01-11. Last modified on 2013-01-11  
*GUID:* {4E65DEE2-745B-4960-81AD-8EAF235597E0}

### PlatformConnector

*Type:* **Class**  
*Status:* Proposed. Version 1.0. Phase 1.0.  
*Package:* Platform Connector *Keywords:*  
*Detail:* Created on 2012-12-19. Last modified on 2013-01-31.  
*GUID:* {D1E79615-8D7B-4707-83D3-7A13067E6D1C}

#### Custom Properties

- isActive = False

#### Connections

Connector	Source	Target	Notes
<b>Aggregation</b> Source -> Destination	Public PlatformConnector	Public Platform	
<b>Association</b>	Public	Public	



Connector	Source	Target	Notes
Unspecified	PlatformComponent	PlatformConnector	

### Attributes

Attribute	Notes	Constraints and tags
<b>PlatformConnector_ID</b> Private		<i>Default:</i>
<b>Name</b> Private		<i>Default:</i>
<b>Description</b> Private		<i>Default:</i>
<b>PlatformConnector_Type</b> Private		<i>Default:</i>
<b>AssociatedComponents</b> PlatformComponent Private		<i>Default:</i>

## Project Constraints

*Type:*

**Package**

*Status:*

Proposed. Version 1.0. Phase 1.0.

*Package:* Domain Objects  
*Detail:* Created on 2013-01-11. Last modified on 2013-01-11  
*GUID:* {5FAAEAB0-A0DC-413b-BOCC-5AB316CB3C00}

## Project Constraints

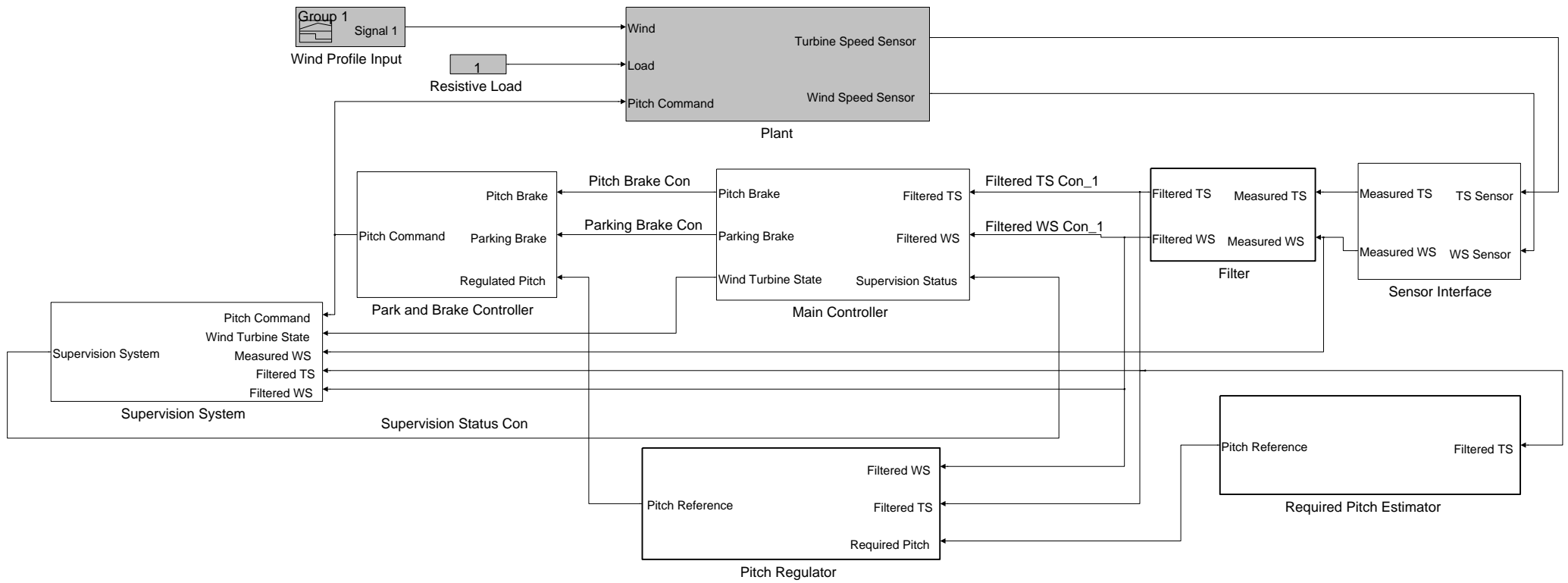
*Type:* **Class**  
*Status:* Proposed. Version 1.0. Phase 1.0.  
*Package:* Project Constraints *Keywords:*  
*Detail:* Created on 2012-12-19. Last modified on 2013-01-21.  
*GUID:* {835A50A4-E985-40c7-9FE7-C3DE2AA06CF6}

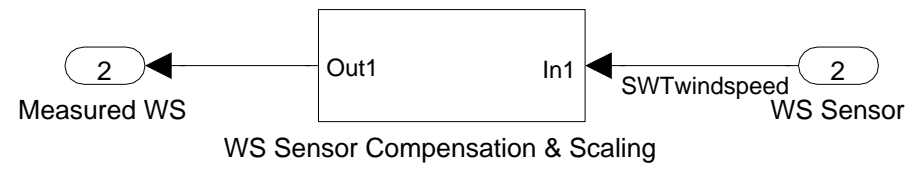
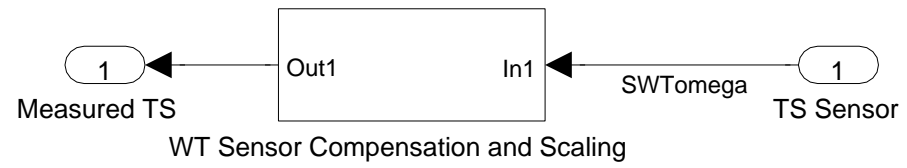
### Custom Properties

- isActive = False

### Connections

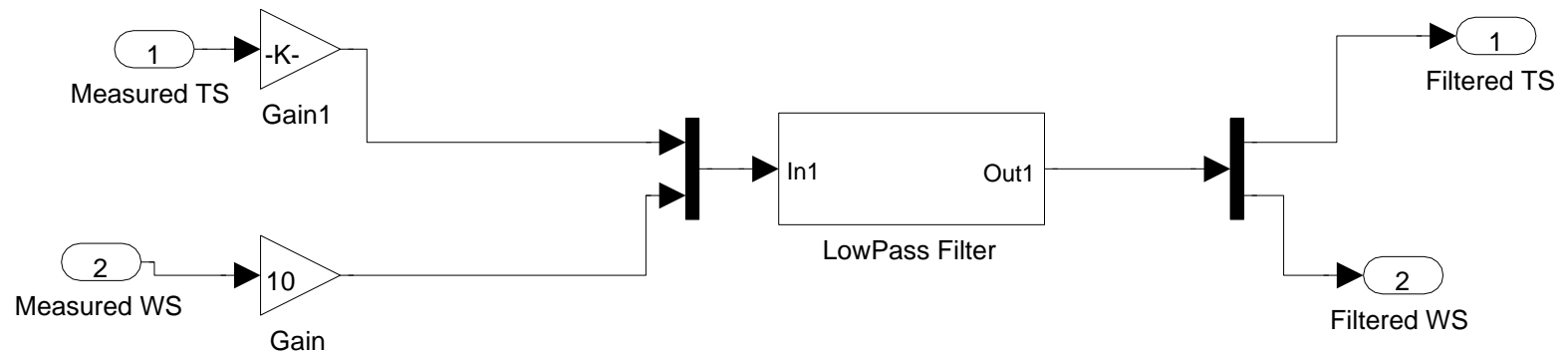
Connector	Source	Target	Notes
<b>Dependency</b> Source -> Destination	Public Project Constraints	Public Platform	
<b>Dependency</b> Destination -> Source	Public Project Constraints	Public  ComponentBasedSystem	
<b>NoteLink</b> Source -> Destination	Public <anonymous>	Public Project Constraints	





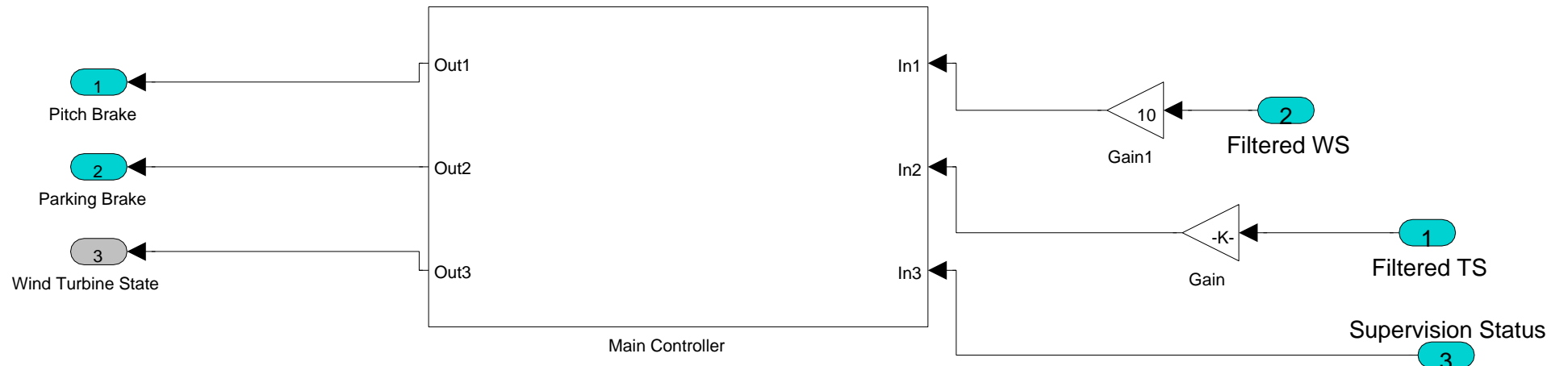




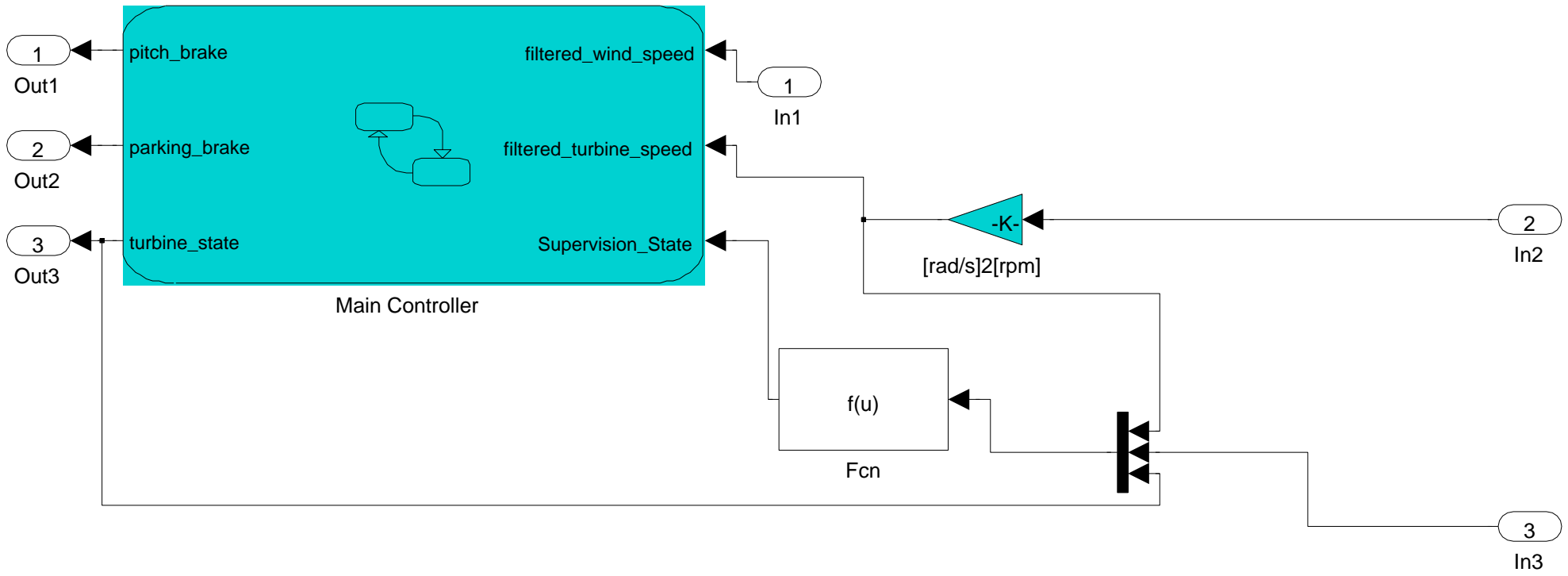


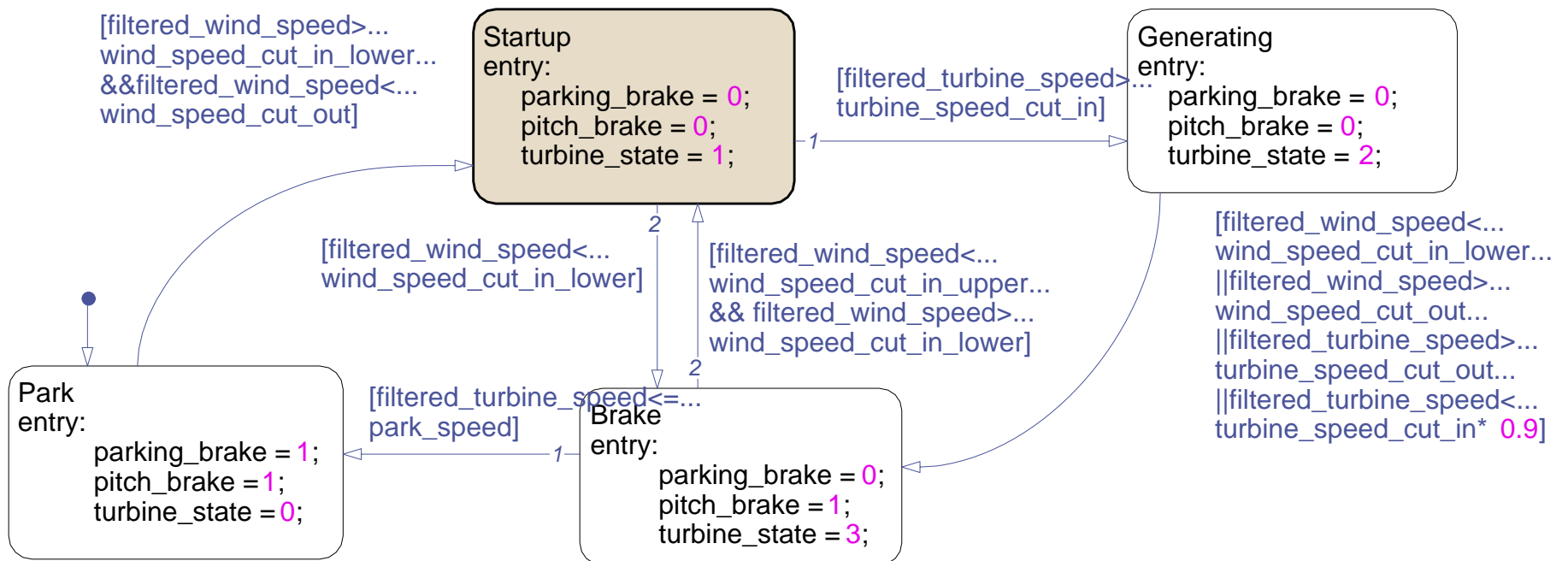


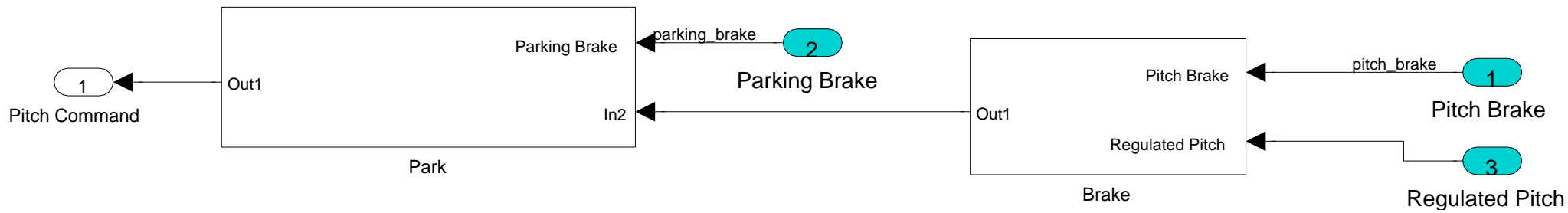


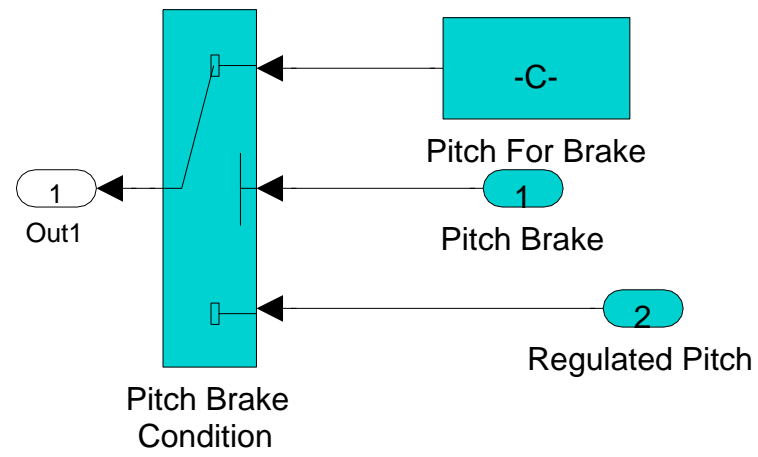


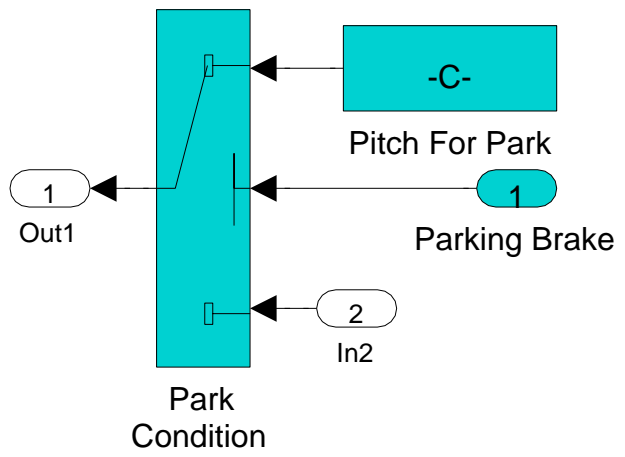
Some parts of the model are inspired from the original MathWorks, Model

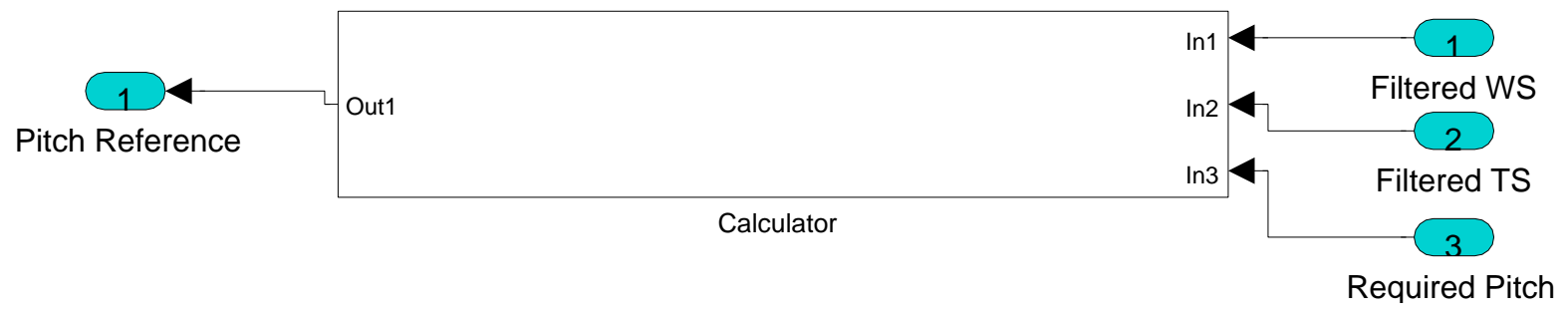


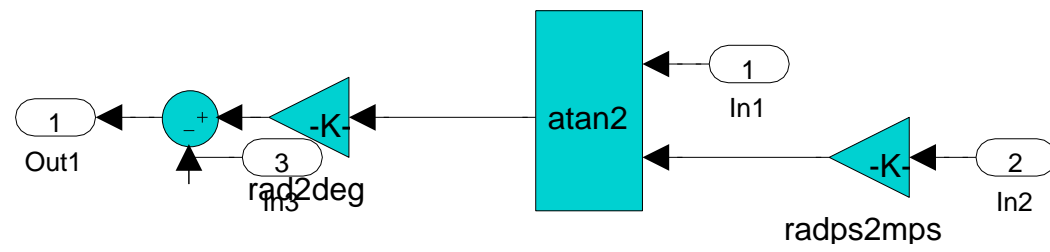




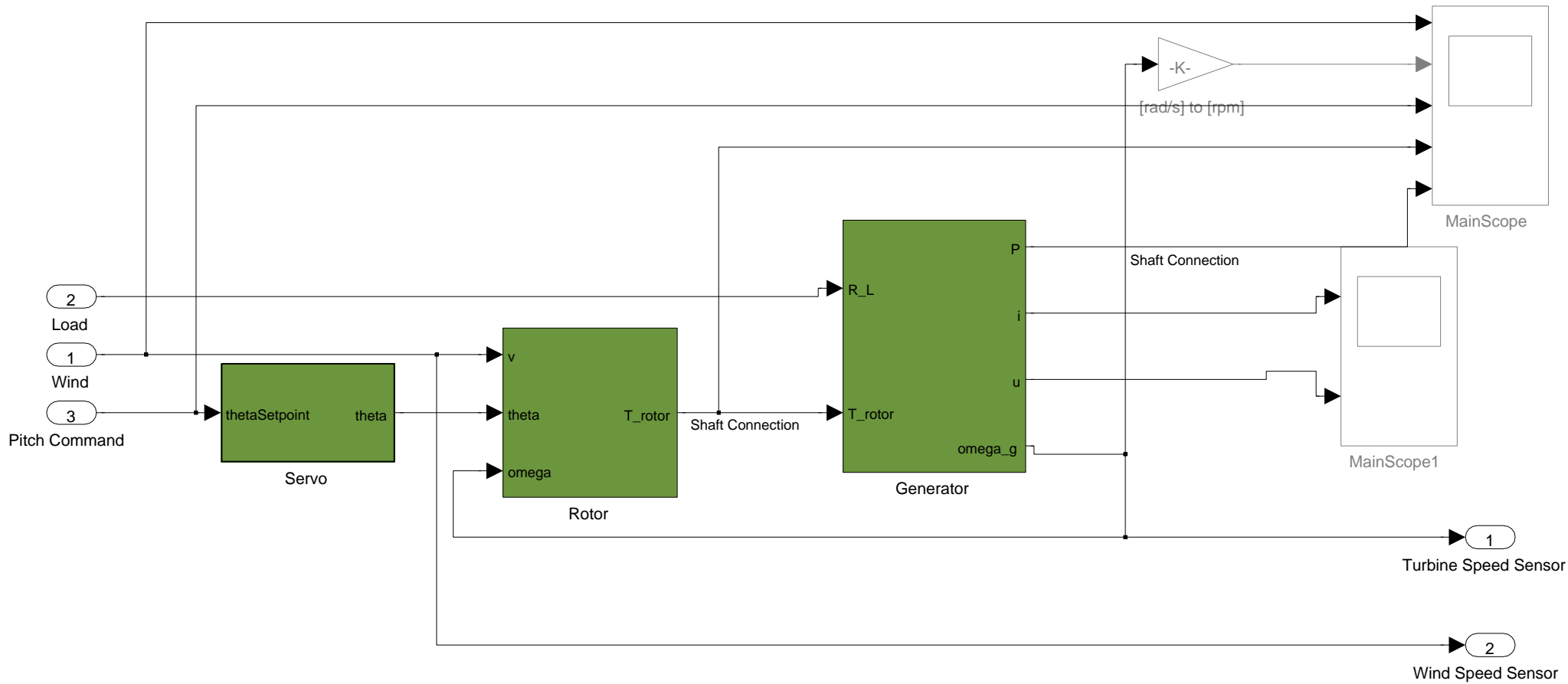


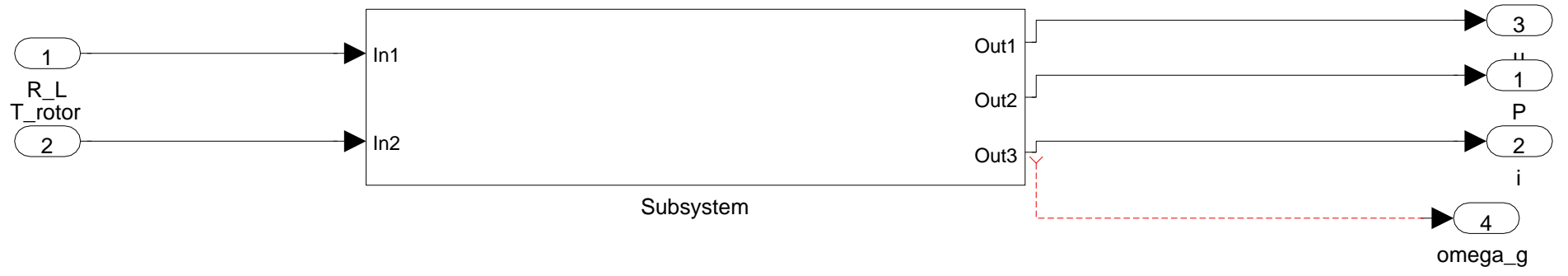


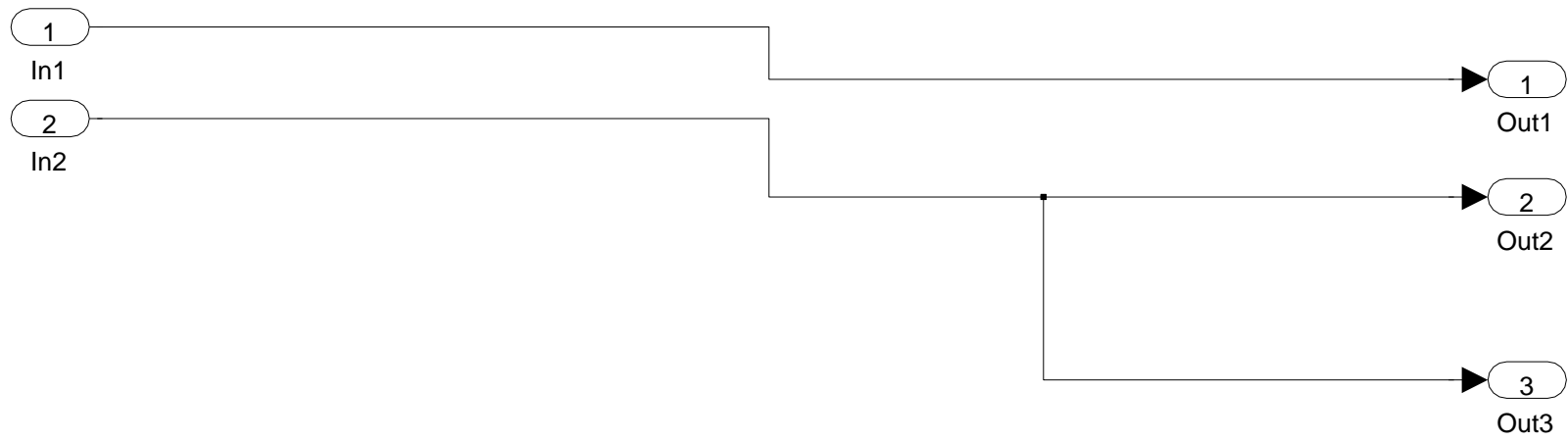


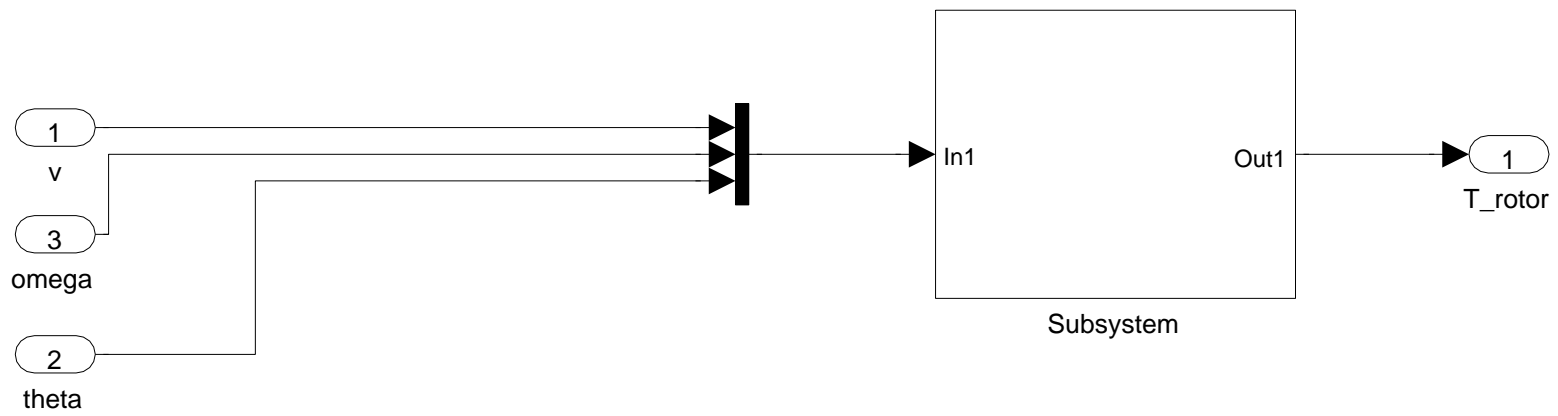














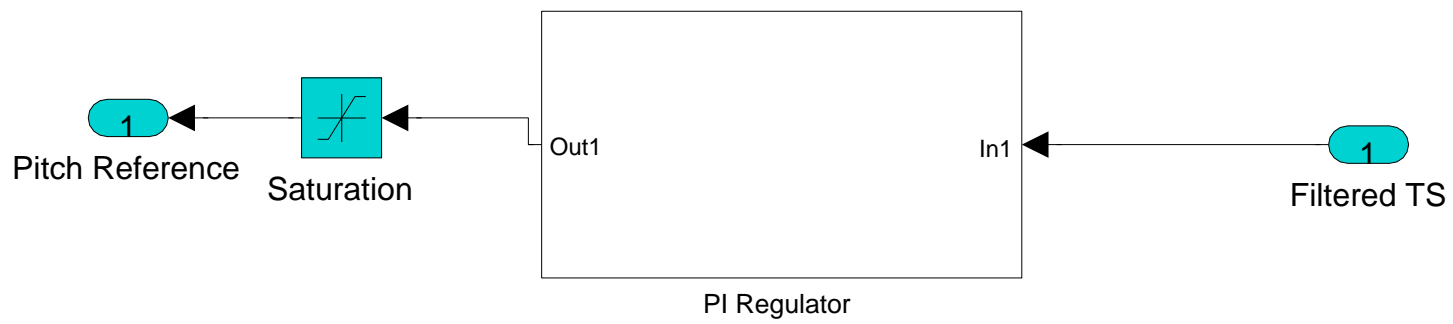
thetaSetpoint

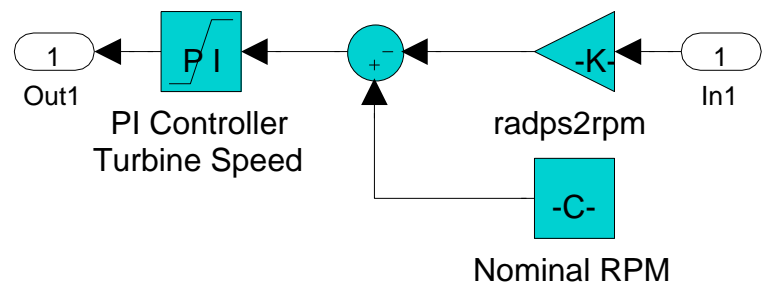
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theta

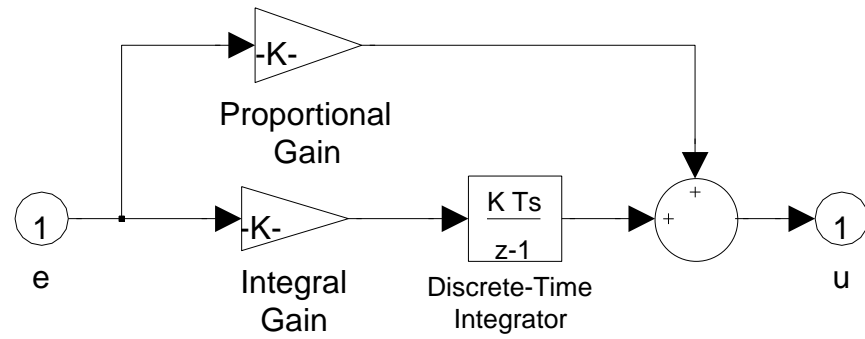
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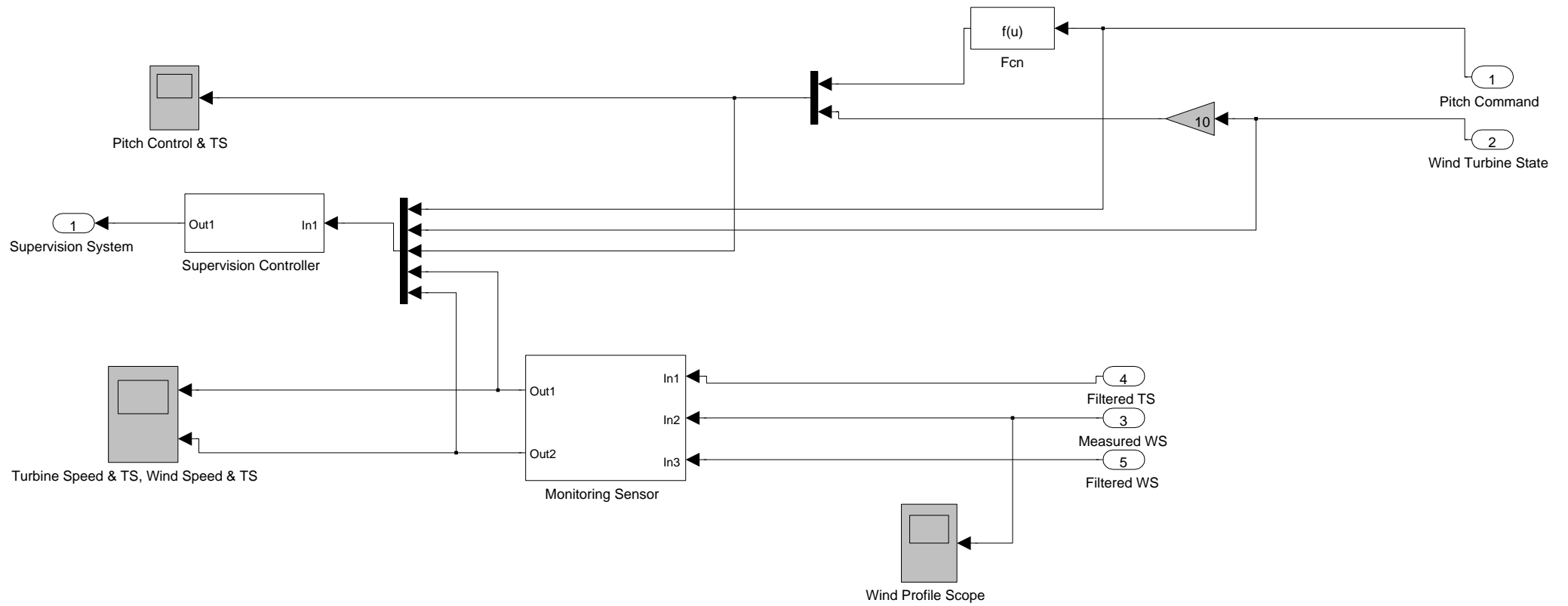


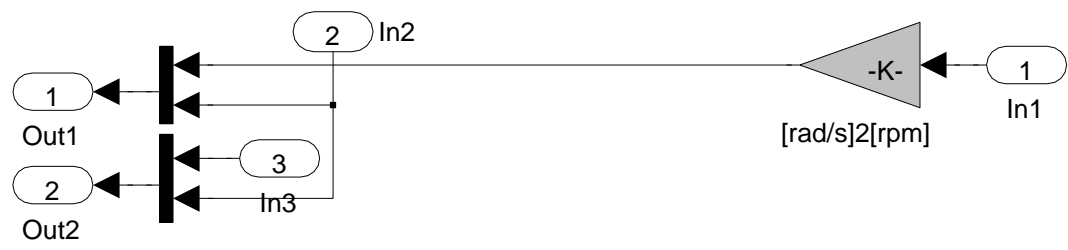


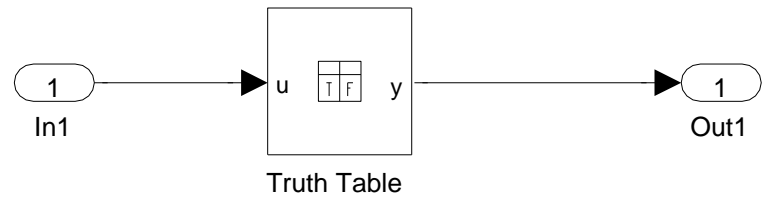












ModelForLibrary/Supervision System/Supervision Controller/Truth Table

<b>Condition Table:</b>				
1: Description	Condition	1	2	3
1 Example condition 1	$u \geq 0$	T	F	-
2 Example condition 2	$u^2 \leq 1$	T	F	-
	Actions	1	1	2
<b>Action Table:</b>				
1: Description	Action			
1 Example action 1 called from D1 & D2 column in condition table	$y = u;$			
2 Example action 2 called from D3 column in condition table	$y = 1 / u;$			