Architecture File of AFCS

Document generated automatically by M2Doc from Capella model of the system

# Tables of Content

**Aucune entrée de table des matières n'a été trouvée.**

# Descriptions of Logical Components

## Logical Component : Logical System

*No description*

### Component Exchanges

|  |  |  |  |
| --- | --- | --- | --- |
| **Component Exchange Name** | **DIrection** | **Destination Component** | **Description** |

|  |  |  |  |
| --- | --- | --- | --- |
| Parameters | INOUT | Air Data System |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Navigation | INOUT | Autopilot |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Orientation | INOUT | Flight Director |  |

## Logical Component : Navigation Subsystem

*No description*

### Allocated Functions

|  |  |
| --- | --- |
| **Function name** | **Description** |

|  |  |
| --- | --- |
| Acquire Navigation Data |  |

|  |  |
| --- | --- |
| Navigational Feedback |  |

### Component Exchanges

|  |  |  |  |
| --- | --- | --- | --- |
| **Component Exchange Name** | **DIrection** | **Destination Component** | **Description** |

|  |  |  |  |
| --- | --- | --- | --- |
| Nav Data | OUT | Safety Subsystem |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Nav Safety | IN | Safety Subsystem |  |

## Logical Component : Safety Subsystem

*No description*

### Allocated Functions

|  |  |
| --- | --- |
| **Function name** | **Description** |

|  |  |
| --- | --- |
| Interrupt Autopilot |  |

|  |  |
| --- | --- |
| Error Modelling |  |

|  |  |
| --- | --- |
| Behavior Modelling |  |

### Component Exchanges

|  |  |  |  |
| --- | --- | --- | --- |
| **Component Exchange Name** | **DIrection** | **Destination Component** | **Description** |

|  |  |  |  |
| --- | --- | --- | --- |
| Nav Data | IN | Navigation Subsystem |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Data Info | IN | Data Subsystem |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Nav Safety | OUT | Navigation Subsystem |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Data Safety | OUT | Data Subsystem |  |

## Logical Component : Data Subsystem

*No description*

### Allocated Functions

|  |  |
| --- | --- |
| **Function name** | **Description** |

|  |  |
| --- | --- |
| Acquire Data Measurements |  |

|  |  |
| --- | --- |
| Data Feedback |  |

### Component Exchanges

|  |  |  |  |
| --- | --- | --- | --- |
| **Component Exchange Name** | **DIrection** | **Destination Component** | **Description** |

|  |  |  |  |
| --- | --- | --- | --- |
| Data Info | OUT | Safety Subsystem |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Data Safety | IN | Safety Subsystem |  |

# Descriptions of Logical Functions

## Function : Root Logical Function

Description:

Parent / Children functions:

|  |  |  |
| --- | --- | --- |
| **Parent function** | **Current function** | **Children functions** |
| Logical Functions | Root Logical Function | * Set Flight Path * Configure Flight Parameters * Configure Autopilot * Control Navigation * Interrupt Autopilot * Get Flight Data * Disable Autopilot Mode * Enable Autopilot Mode * Retrieve Flight Data Snapshot * Set Orientation Parameters * Acquire Navigation Data * Acquire Data Measurements * Error Modelling * Behavior Modelling * Navigational Feedback * Data Feedback |

List of inputs:

*No input*

List of outputs:

*No output*

Participation to functional chains:

*None*

Allocated to:

*Function not allocated*

## Function : Set Flight Path

Description:

Parent / Children functions:

|  |  |  |
| --- | --- | --- |
| **Parent function** | **Current function** | **Children functions** |
| Root Logical Function | Set Flight Path | * Set Altitude * Set Waypoints * Set Speed * Set Veritical Speed * Take Inputs * Set Parameters * Set Parameters |

List of inputs:

*No input*

List of outputs:

*No output*

Participation to functional chains:

*None*

Allocated to:

*Function not allocated*

## Function : Set Altitude

Description:

*No description*

Parent / Children functions:

|  |  |  |
| --- | --- | --- |
| **Parent function** | **Current function** | **Children functions** |
| Set Flight Path | Set Altitude | *No children function* |

List of inputs:

*No input*

List of outputs:

| **Outgoing functional exchange** | **Exchanged items** |
| --- | --- |

|  |  |
| --- | --- |
| Altitude Stablization | *No exchanged item* |

Participation to functional chains:

*None*

Allocated to:

* Autopilot

## Function : Set Waypoints

Description:

*No description*

Parent / Children functions:

|  |  |  |
| --- | --- | --- |
| **Parent function** | **Current function** | **Children functions** |
| Set Flight Path | Set Waypoints | *No children function* |

List of inputs:

*No input*

List of outputs:

| **Outgoing functional exchange** | **Exchanged items** |
| --- | --- |

|  |  |
| --- | --- |
| Control Yaw | *No exchanged item* |

Participation to functional chains:

*None*

Allocated to:

* Autopilot

## Function : Set Speed

Description:

*No description*

Parent / Children functions:

|  |  |  |
| --- | --- | --- |
| **Parent function** | **Current function** | **Children functions** |
| Set Flight Path | Set Speed | *No children function* |

List of inputs:

*No input*

List of outputs:

*No output*

Participation to functional chains:

*None*

Allocated to:

* Autopilot

## Function : Set Veritical Speed

Description:

*No description*

Parent / Children functions:

|  |  |  |
| --- | --- | --- |
| **Parent function** | **Current function** | **Children functions** |
| Set Flight Path | Set Veritical Speed | *No children function* |

List of inputs:

*No input*

List of outputs:

| **Outgoing functional exchange** | **Exchanged items** |
| --- | --- |

|  |  |
| --- | --- |
| Speed Stablization | *No exchanged item* |

Participation to functional chains:

*None*

Allocated to:

* Autopilot

## Function : Take Inputs

Description:

*No description*

Parent / Children functions:

|  |  |  |
| --- | --- | --- |
| **Parent function** | **Current function** | **Children functions** |
| Set Flight Path | Take Inputs | *No children function* |

List of inputs:

| **Incoming functional exchange** | **Exchanged items** |
| --- | --- |

|  |  |
| --- | --- |
| Flight Inputs | *No exchanged item* |

|  |  |
| --- | --- |
| Flight Parameters Input | *No exchanged item* |

List of outputs:

| **Outgoing functional exchange** | **Exchanged items** |
| --- | --- |

|  |  |
| --- | --- |
| Parameters | *No exchanged item* |

|  |  |
| --- | --- |
| Parameters | *No exchanged item* |

Participation to functional chains:

* Configure Speed Parameters
* Configure Altitude Parameters
* Configure Yaw Parameters

Allocated to:

*Function not allocated*

## Function : Set Parameters

Description:

*No description*

Parent / Children functions:

|  |  |  |
| --- | --- | --- |
| **Parent function** | **Current function** | **Children functions** |
| Set Flight Path | Set Parameters | *No children function* |

List of inputs:

| **Incoming functional exchange** | **Exchanged items** |
| --- | --- |

|  |  |
| --- | --- |
| Parameters | *No exchanged item* |

List of outputs:

*No output*

Participation to functional chains:

*None*

Allocated to:

*Function not allocated*

## Function : Set Parameters

Description:

*No description*

Parent / Children functions:

|  |  |  |
| --- | --- | --- |
| **Parent function** | **Current function** | **Children functions** |
| Set Flight Path | Set Parameters | *No children function* |

List of inputs:

| **Incoming functional exchange** | **Exchanged items** |
| --- | --- |

|  |  |
| --- | --- |
| Parameters | *No exchanged item* |

List of outputs:

*No output*

Participation to functional chains:

* Configure Speed Parameters
* Configure Altitude Parameters
* Configure Yaw Parameters

Allocated to:

*Function not allocated*

## Function : Configure Flight Parameters

Description:

*No description*

Parent / Children functions:

|  |  |  |
| --- | --- | --- |
| **Parent function** | **Current function** | **Children functions** |
| Root Logical Function | Configure Flight Parameters | *No children function* |

List of inputs:

*No input*

List of outputs:

| **Outgoing functional exchange** | **Exchanged items** |
| --- | --- |

|  |  |
| --- | --- |
| Flight Inputs | *No exchanged item* |

Participation to functional chains:

*None*

Allocated to:

*Function not allocated*

## Function : Configure Autopilot

Description:

*No description*

Parent / Children functions:

|  |  |  |
| --- | --- | --- |
| **Parent function** | **Current function** | **Children functions** |
| Root Logical Function | Configure Autopilot | *No children function* |

List of inputs:

*No input*

List of outputs:

*No output*

Participation to functional chains:

*None*

Allocated to:

*Function not allocated*

## Function : Control Navigation

Description:

*No description*

Parent / Children functions:

|  |  |  |
| --- | --- | --- |
| **Parent function** | **Current function** | **Children functions** |
| Root Logical Function | Control Navigation | * Set Yaw Damper Mode * Enable Automatic Landing * Set Pitch Trim |

List of inputs:

*No input*

List of outputs:

*No output*

Participation to functional chains:

*None*

Allocated to:

*Function not allocated*

## Function : Set Yaw Damper Mode

Description:

*No description*

Parent / Children functions:

|  |  |  |
| --- | --- | --- |
| **Parent function** | **Current function** | **Children functions** |
| Control Navigation | Set Yaw Damper Mode | *No children function* |

List of inputs:

| **Incoming functional exchange** | **Exchanged items** |
| --- | --- |

|  |  |
| --- | --- |
| Control Yaw | *No exchanged item* |

List of outputs:

*No output*

Participation to functional chains:

* Configure Yaw Parameters

Allocated to:

* Autopilot

## Function : Enable Automatic Landing

Description:

*No description*

Parent / Children functions:

|  |  |  |
| --- | --- | --- |
| **Parent function** | **Current function** | **Children functions** |
| Control Navigation | Enable Automatic Landing | *No children function* |

List of inputs:

*No input*

List of outputs:

*No output*

Participation to functional chains:

*None*

Allocated to:

* Autopilot

## Function : Set Pitch Trim

Description:

*No description*

Parent / Children functions:

|  |  |  |
| --- | --- | --- |
| **Parent function** | **Current function** | **Children functions** |
| Control Navigation | Set Pitch Trim | *No children function* |

List of inputs:

| **Incoming functional exchange** | **Exchanged items** |
| --- | --- |

|  |  |
| --- | --- |
| Altitude Stablization | *No exchanged item* |

|  |  |
| --- | --- |
| Speed Stablization | *No exchanged item* |

List of outputs:

*No output*

Participation to functional chains:

* Configure Speed Parameters
* Configure Altitude Parameters

Allocated to:

* Autopilot

## Function : Interrupt Autopilot

Description:

*No description*

Parent / Children functions:

|  |  |  |
| --- | --- | --- |
| **Parent function** | **Current function** | **Children functions** |
| Root Logical Function | Interrupt Autopilot | *No children function* |

List of inputs:

| **Incoming functional exchange** | **Exchanged items** |
| --- | --- |

|  |  |
| --- | --- |
| Error Classification | *No exchanged item* |

List of outputs:

*No output*

Participation to functional chains:

*None*

Allocated to:

* Safety Subsystem

## Function : Get Flight Data

Description:

*No description*

Parent / Children functions:

|  |  |  |
| --- | --- | --- |
| **Parent function** | **Current function** | **Children functions** |
| Root Logical Function | Get Flight Data | *No children function* |

List of inputs:

*No input*

List of outputs:

*No output*

Participation to functional chains:

* Configure Speed Parameters
* Configure Altitude Parameters
* Configure Yaw Parameters

Allocated to:

* Air Data System

## Function : Disable Autopilot Mode

Description:

*No description*

Parent / Children functions:

|  |  |  |
| --- | --- | --- |
| **Parent function** | **Current function** | **Children functions** |
| Root Logical Function | Disable Autopilot Mode | *No children function* |

List of inputs:

*No input*

List of outputs:

*No output*

Participation to functional chains:

*None*

Allocated to:

* Autopilot

## Function : Enable Autopilot Mode

Description:

*No description*

Parent / Children functions:

|  |  |  |
| --- | --- | --- |
| **Parent function** | **Current function** | **Children functions** |
| Root Logical Function | Enable Autopilot Mode | *No children function* |

List of inputs:

*No input*

List of outputs:

*No output*

Participation to functional chains:

*None*

Allocated to:

* Autopilot

## Function : Retrieve Flight Data Snapshot

Description:

*No description*

Parent / Children functions:

|  |  |  |
| --- | --- | --- |
| **Parent function** | **Current function** | **Children functions** |
| Root Logical Function | Retrieve Flight Data Snapshot | *No children function* |

List of inputs:

*No input*

List of outputs:

| **Outgoing functional exchange** | **Exchanged items** |
| --- | --- |

|  |  |
| --- | --- |
| Flight Parameters Input | *No exchanged item* |

Participation to functional chains:

* Configure Speed Parameters
* Configure Altitude Parameters
* Configure Yaw Parameters

Allocated to:

*Function not allocated*

## Function : Set Orientation Parameters

Description:

*No description*

Parent / Children functions:

|  |  |  |
| --- | --- | --- |
| **Parent function** | **Current function** | **Children functions** |
| Root Logical Function | Set Orientation Parameters | *No children function* |

List of inputs:

*No input*

List of outputs:

*No output*

Participation to functional chains:

*None*

Allocated to:

* Flight Director

## Function : Acquire Navigation Data

Description:

*No description*

Parent / Children functions:

|  |  |  |
| --- | --- | --- |
| **Parent function** | **Current function** | **Children functions** |
| Root Logical Function | Acquire Navigation Data | *No children function* |

List of inputs:

| **Incoming functional exchange** | **Exchanged items** |
| --- | --- |

|  |  |
| --- | --- |
| Nav Data | *No exchanged item* |

List of outputs:

| **Outgoing functional exchange** | **Exchanged items** |
| --- | --- |

|  |  |
| --- | --- |
| Nav Data | *No exchanged item* |

Participation to functional chains:

*None*

Allocated to:

* Navigation Subsystem

## Function : Acquire Data Measurements

Description:

*No description*

Parent / Children functions:

|  |  |  |
| --- | --- | --- |
| **Parent function** | **Current function** | **Children functions** |
| Root Logical Function | Acquire Data Measurements | *No children function* |

List of inputs:

| **Incoming functional exchange** | **Exchanged items** |
| --- | --- |

|  |  |
| --- | --- |
| Data Feedback | *No exchanged item* |

List of outputs:

| **Outgoing functional exchange** | **Exchanged items** |
| --- | --- |

|  |  |
| --- | --- |
| Data Feedback | *No exchanged item* |

Participation to functional chains:

*None*

Allocated to:

* Data Subsystem

## Function : Error Modelling

Description:

*No description*

Parent / Children functions:

|  |  |  |
| --- | --- | --- |
| **Parent function** | **Current function** | **Children functions** |
| Root Logical Function | Error Modelling | *No children function* |

List of inputs:

| **Incoming functional exchange** | **Exchanged items** |
| --- | --- |

|  |  |
| --- | --- |
| State Information | *No exchanged item* |

List of outputs:

| **Outgoing functional exchange** | **Exchanged items** |
| --- | --- |

|  |  |
| --- | --- |
| Error Classification | *No exchanged item* |

Participation to functional chains:

*None*

Allocated to:

* Safety Subsystem

## Function : Behavior Modelling

Description:

*No description*

Parent / Children functions:

|  |  |  |
| --- | --- | --- |
| **Parent function** | **Current function** | **Children functions** |
| Root Logical Function | Behavior Modelling | *No children function* |

List of inputs:

*No input*

List of outputs:

| **Outgoing functional exchange** | **Exchanged items** |
| --- | --- |

|  |  |
| --- | --- |
| State Information | *No exchanged item* |

Participation to functional chains:

*None*

Allocated to:

* Safety Subsystem

## Function : Navigational Feedback

Description:

*No description*

Parent / Children functions:

|  |  |  |
| --- | --- | --- |
| **Parent function** | **Current function** | **Children functions** |
| Root Logical Function | Navigational Feedback | *No children function* |

List of inputs:

| **Incoming functional exchange** | **Exchanged items** |
| --- | --- |

|  |  |
| --- | --- |
| Nav Data | *No exchanged item* |

List of outputs:

| **Outgoing functional exchange** | **Exchanged items** |
| --- | --- |

|  |  |
| --- | --- |
| Nav Data | *No exchanged item* |

Participation to functional chains:

*None*

Allocated to:

* Navigation Subsystem

## Function : Data Feedback

Description:

*No description*

Parent / Children functions:

|  |  |  |
| --- | --- | --- |
| **Parent function** | **Current function** | **Children functions** |
| Root Logical Function | Data Feedback | *No children function* |

List of inputs:

| **Incoming functional exchange** | **Exchanged items** |
| --- | --- |

|  |  |
| --- | --- |
| Data Feedback | *No exchanged item* |

List of outputs:

| **Outgoing functional exchange** | **Exchanged items** |
| --- | --- |

|  |  |
| --- | --- |
| Data Feedback | *No exchanged item* |

Participation to functional chains:

*None*

Allocated to:

* Data Subsystem

# Descriptions of Interfaces and Data

## Data

## Predefined Types

Data types definition:

* Boolean
* Byte
* Char
* Double
* Float
* Hexadecimal
* Integer
* Long
* LongLong
* Short
* String
* UnsignedInteger
* UnsignedShort
* UnsignedLong
* UnsignedLongLong