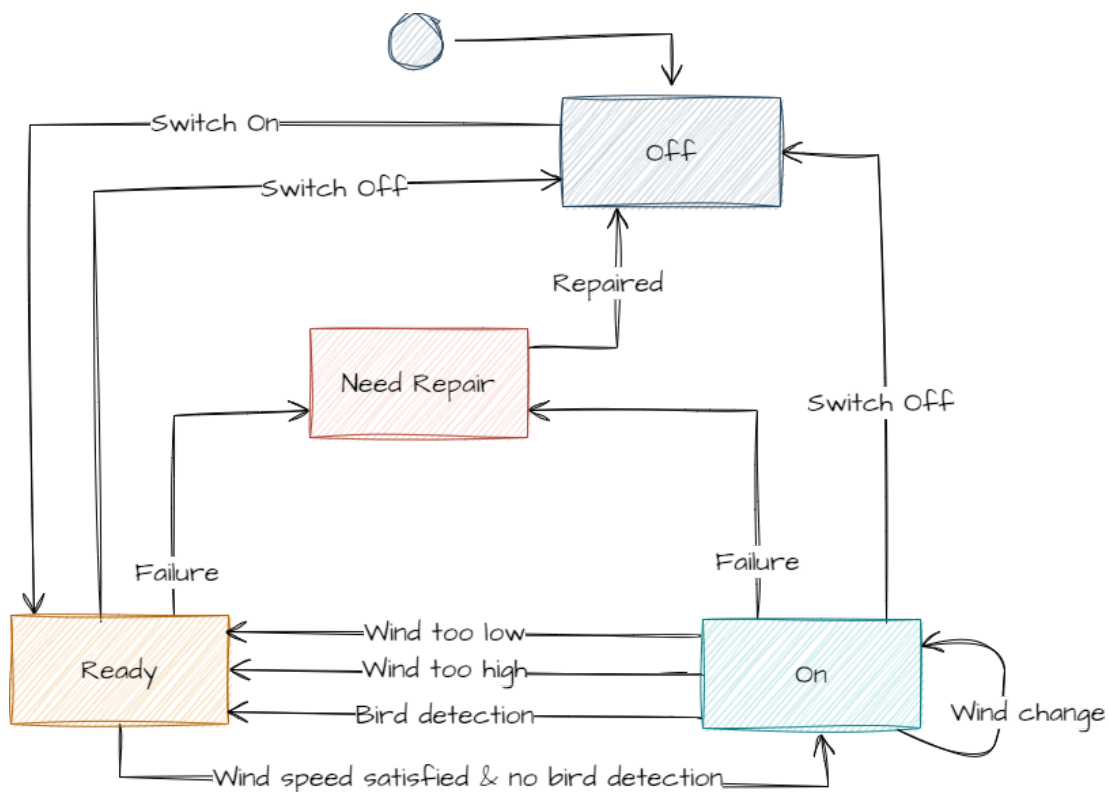
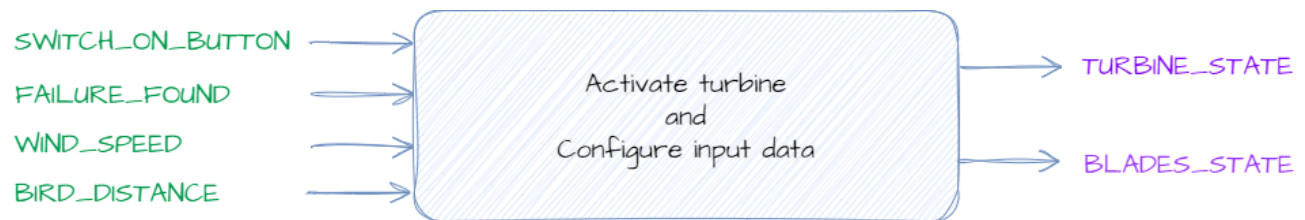


Wind Turbine Requirements (English)

- 1. General information
- 2. Requirements
- 3. Data definitions
 - 3.1. Inputs
 - 3.2. Outputs
 - 3.3. Internal

1. General information

The state machine diagram below (Wind Turbine State flow) allows to identify if turbine blades can rotate in order to produce energy. The turbine activation is under a technical agent responsibility.



2. Requirements

Wind speed condition	RQ_Wind_Turbine_SF_02_1.0	06/04/23
<p>The speed of the wind must be between 15 and 90 km/h to allow blades rotation and energy generation. If the wind speed is out of these boundaries, the turbine state changes to Ready state and blades stop rotation.</p>		

Bird absence condition	RQ_Wind_Turbine_SF_03_1.0	06/04/23
<pre> 1 IF 2 [3 BIRD_DISTANCE>0 4 AND 5 BIRD_DISTANCE<1000 6] 7 THEN 8 BIRD_CONDITION=Unsatisfied 9 ELSE 10 BIRD_CONDITION=Satisfied </pre>		

Blades status	RQ_Wind_Turbine_SF_01_1.0	06/04/23
<pre> 1 IF 2 [3 SWITCH_ON_BUTTON==Enable 4 AND 5 FAILURE_FOUND==None 6 AND 7 WIND_CONDITION==Satisfied 8 AND 9 BIRD_CONDITION==Satisfied 10] 11 THEN 12 BLADES_STATUS=ON 13 ELSE 14 BLADES_STATUS=OFF 15 </pre>		

3. Data definitions

3.1. Inputs

Requirement	Name	Description	Values	Precision	Initial	Unit
-------------	------	-------------	--------	-----------	---------	------

RQ_Wind_Turbine_SF_04_1.0	SWITCH_ON_BUTTON	Turbine activation request	true=Enable false_Disable		false	-
RQ_Wind_Turbine_SF_05_1.0	WIND_SPEED	Wind speed	[0-200]	1	0	Km/h
RQ_Wind_Turbine_SF_06_1.0	FAILURE_FOUND	System Failure	0=None 1=PowerFailure 2=ElectricalDefect 3=EngineFault		0	-
RQ_Wind_Turbine_SF_07_1.0	BIRD_DISTANCE	Bird distance	[0-2000]	10	0	m

3.2. Outputs

Requirement	Name	Description	Values	Initial
RQ_Wind_Turbine_SF_08_1.0	TURBINE_STATE	Current turbine state	0=Off 1=Ready 2=On -1=NeedRepair	0
RQ_Wind_Turbine_SF_09_1.0	BLADES_STATE	Current blade state	0=Off 1=On	0

3.3. Internal

Requirement	Name	Description	Values
RQ_Wind_Turbine_SF_2_1.0	WIND_CONDITION	Wind speed condition	false=Unsatisfied true=Satisfied
RQ_Wind_Turbine_SF_3_1.0	BIRD_CONDITION	Bird distance condition	false=Unsatisfied true=Satisfied