Process or Product Name:	SPARC
Process Owner:	Team Wisdom

Module / Part	PRSs	Potential Failure Mode	Potential Failure Effects	S E V
What is being analyzed?	What are the requirements that might be affected by the software change?	In what way could the process step/function potentially fail to meet process requirements or intent?	What is the impact on the Key Output Variables (Customer Requirements) or internal requirements?	How Severe is the effect to the customer?
	Movimiento en ejes X y Y	Los rieles no se mueven.	Queja del cliente debido a que no funciona el producto.	8
		Los rieles se mueven, pero no llegan a su objetivo.	Queja del cliente debido a que no funciona el producto como se espera.	7

	Movimiento en eje Z	Los rieles no se mueven.	Queja del cliente debido a que no funciona el producto.	8
		Los rieles se mueven, pero no llegan a su objetivo.	Queja del cliente debido a que no funciona el producto como se espera.	7
	Errores			
{Module / Part}	{PRS_ID}	{Control_does_not_perform_functionality_}	{Client_will_see}	

Proposal:

- In this column the idea is to use the PRS affected by the change.

Reason(s):

- Since it is harder to analyze the source code modules affected by the change and the involved functionality. Normally in the modules there is a mix of functionality.
- Based on PRS would make easier to fill the PFM and PFE columns

Proposal:

- Identify the effect on the customer

Reason(s):

- This FMEA is centered in the customer

Proposal:

- Use the severity range t
- Customer focused (end plant)

Reason(s):

- This is a Software FMEA

Proposal:

- Identify and write down in separate rows the different functionality (outputs) identified in the requirement and the failure mode will be that it is not performed.

Reason(s):

- Because it is the output for the customer, using code will create more complexity and we can get lost easily
- Splitting the outputs give granularity

	Prepared by:	Team Wisdom
	FMEA Date (Orig) (Rev)1_	

Potential Causes	0 0 0	Current Controls	D E T	R P N	Actions Recommended
What are the causes of this Failure Mode? Typical causes result from process input failures (review Process Map).	How often does cause or FM occur?	What are the existing controls and procedures (inspection and test) that prevent the cause or the Failure Mode? Should include an SOP number.	How well can you detect cause or FM?	SEV * OCC * DET	What are the actions for reducing the occurrence of the Cause, or improving detection? Should have actions only on high RPN's or easy fixes.
El driver del motor está implementado incorrectamente.	5	Branch Test	5	240	Revisar cada driver antes de implementarlo en el circuito.
Hay un corto circuito en el sistema electrónico.	6	Branch Test	5	200	Revisar circuitería antes de implementación.
La programación de comandos para movimiento es incorrecta.	7	Branch Test	5	280	Programar por secciones comprobando cada una antes de probar.
Existe un bloqueo físico en los motores o rieles.	4	Branch Test	2	64	Revisar antes de probar los mecanismos
No hay energía en el circuito.	2	Branch Test	1	16	Revisar conexión a energía.
El driver del motor está implementado incorrectamente.	5	Branch Test	5	175	Revisar cada driver antes de implementarlo en el circuito.
Hay un corto circuito en el sistema electrónico.	6	Branch Test	5	210	Revisar circuitería antes de implementación .
La programación de comandos para movimiento es incorrecta.	7	Branch Test	5	245	Programar por secciones comprobando cada una antes de probar.
Existe un bloqueo físico en los motores o rieles.	4	Branch Test	2	56	Revisar antes de probar los mecanismos.

 		•			
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Hay un corto circuito en el sistema electrónico.		6 Branch Test 5		200	Revisar circuitería antes de implementación.
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			<u> </u>		
			<u> </u>		
{Routine_does not_}		{Code_Peer_Reviews, Bench_Test, Test_Case_Design, Design_Test_Plan, Test_Plan_Review, Test_Run (Black_Box_Test), Test_Run_Review, Thermal_Performance_Test}			{ACTION_DESCRIPTION}

Proposal:

- Identify what could happen in the code to break this functionality. Do not evaluate if a hardware component failed.

Reason(s):

- This is a Software FMEA.

table. I customer or

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Proposal:

- Here can be set a list of current controls that apply to all cases, those controls could be: Test Plan Design, code review, Bench test, Test runs, test plan review, etc. and these can be the same for all

Reason(s):

- This is a Software FMEA.

Proposal:

- Here add in a generic idea of what to test

Reason(s):

- The intention in this column is to identify what we want to validate.

Proposal:

- Range based on likelihood that the end customer has access to this functionality
- in Case of plant occurrence has to be very high.

Reason(s):

- From software perspective occurrence is very high since failures are not intermittent.

Proposal:

- The way to rank it is: on the likelihood the tester can find the bug.

Reason(s):

- Customer focused

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Resp.	Test Case Associated	P S E V	P O C C	P D E T	P R P N
Who is Responsible for the recommended action?	Which test case verify that everything is ok?				
Fernando Escudero	Movimiento ejes X y Y				
Fernando Escudero	Movimiento ejes X y Y				
Fernando Escudero	Movimiento ejes X y Y				
Fernando Escudero	Movimiento ejes X y Y				
Fernando Escudero	Movimiento ejes X y Y				口
Fernando Escudero	Movimiento ejes X y Y				
Fernando Escudero	Movimiento ejes X y Y				
Fernando Escudero	Movimiento ejes X y Y				
Fernando Escudero	Movimiento ejes X y Y				

Adriana Avitia	Movimiento eje Z				
Adriana Avitia	Movimiento eje Z				
Adriana Avitia	Movimiento eje Z				
Adriana Avitia	Movimiento eje Z				
Adriana Avitia	Movimiento eje Z				
Adriana Avitia	Movimiento eje Z				
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Adriana Avitia	Movimiento eje Z				
Adriana Avitia	Movimiento eje Z		П		
			П		
		+	\vdash	+	
				\blacksquare	
		+	\vdash	+	
		<u> </u>	\vdash	+	
{REPSONSIBLES_NAMES}	{LINK_TEST_CASE/LINK_DOCOUMENT/TEST_SPEC}				

Proposal: - Here add the tests cases to be run - Also can be added suggestions for the Hardware team. Reason(s): - The purpose of this FMEA is to define the test cases for the test plan. oposal: **Proposal:** ere normally the direct responsible - In this section the only affected item is the detection. the testers but also the reviewers -The way to rank it is: on the likelihood the tester can find the bug with the test cases d DQA Reason(s): ason(s): - There are no functionality changes in the scope of a VE project Il involved in the validation process e responsible in some way