Use Case	Gas detection system		25
Context	As soon as a defined limit value for gases is exceeded, the system shall provide the kitchen staff and manager with the ability to receive a warning in the form of a message on the cell phone to remain capable of acting and to guarantee a safe working environment.		
Domain	Kitchen environment	*Business Value*	Personalization ☐ Acquisition ☒ Communication ☒ Optimization ☒ Control ☐ Analysis ☒

Description		
Stakeholders & Interests	*Stakeholder*	*Interests*
	Kitchen staff	Safe working environment; remain capable of acting regardless of the situation
	Manager	Safe working environment; remain capable of acting regardless of the situation
Required Data	Temperature, smoke, liquefied petroleum gas (LPG), and carbon monoxide (CO).	
Current Conditions	Current conditions are not presented as an example.	

Procedure		
Trigger	The system boots.	
Use Case Procedure	*Step*	*Activity*
	1. Initialization	Three temperature measurements are taken, which serve as initial values for the Moving Average 3 algorithm.
	2. Temperature recording	The temperature of the environment is recorded.
	3. Temperature fluctuation detection	The predicted temperature value of the Moving Average 3 algorithm exceeds the defined limit value.
	4. Gas detection	Smoke, liquefied petroleum gas (LPG), and carbon monoxide (CO) in the environment have been detected.
	5. Gas limit exceedance	The recorded gas value exceeds the defined limit value.
	6. Warning transmission	The system sends the collected values together with an explanation to the user.
Use Case Anomalies	*Step*	*Activity*
	3a. No temperature fluctuation detected	The predicted temperature value of the Moving Average 3 algorithm is within the defined limit. The system repeats step 2.
	5a. No gas limit exceedance detected	The detected gas value is within the defined limit value. The system repeats step 2.
Final State	The user receives a warning on their cell phone.	

Overlaps				
No overlaps with other domains.				
Sum of Business Values total (incl. title domain, header)	Personalization	0	Acquisition	1
	Communication	1	Optimization	1
	Control	0	Analysis	1