Use Case	Automatic composting	system				22
Context	As soon as kitchen waste is placed in the designated area, the system shall provide the kitchen staff with the ability to distinguish between compostable and non-compostable waste automatically, then compost the waste and deliver it to the designated area to obtain fertilizer with minimal effort.					
Domain	Food & Nutrition	Business Value	Personalization Communication Control		Acquisition Optimization Analysis	

Description			
Stakeholders & Interests	Stakeholder	Interests	
	Kitchen staff	Reduce effort	
	Manager	Processing of food waste to obtain fertilizer; low personnel deployment; cost reduction	
	Government	Reduction of environmental pollution; establishment of composting facilities	
Required Data	Waste detection: images of compostable and non-compostable waste; camera; ultrasound Compost: temperature; ambient temperature; humidity Transporter: infrared		
Current Conditions	Current conditions are not presented as an example.		

Procedure				
Trigger	The kitchen staff places the waste in the designated area.			
Use Case Procedure	Step	Activity		
	1. Object recognition	Ultrasonic sensors are used to detect the presence of waste.		
	2. Waste Identification	A deep learning algorithm recognizes whether the waste is compostable.		
	3. Identification of compostable waste	The waste is processed further.		
	4. Waste shredding	The waste is broken down into smaller components by a shredder.		
	5. Waste composting	The waste is added to the compost.		
	6. Completion of composting	The composting of the collected waste is completed.		
	7. Initiation of compost collection	An automatic transporter collects the compost.		
	8. Delivery of compost	The compost is delivered to the desired location.		

Use Case Anomalies	Step	Activity
	3a. Non-compostable waste recognized	The waste is transported to the trash can.
Final State	The compost is in the designated place.	

Overlaps						
Domain 2	Kitchen environment	Business Value	Personalization Communication Control		Acquisition Optimization Analysis	
Sum of Business Values total (incl. title domain, header)		Personalization Communication Control	0 1 1	Acquisition Optimization Analysis	1 1 0	