



**Group A:**  
RACI Matrices and  
activity definition

# Topic 1: Knowledge Base and Taxonomy

Activity	Jacopo Raffi	Nicola Emmolo	Cosimo Botticelli (T8)	Alessandro Querci (T6)	Giovanni Bellini (T2)	Riccardo Parente (T4)	Davide Cerioli (T3)
<b>MILESTONE 1</b>							
Reasearch of SOTA approaches for KPIs	A	R	-	-	-	-	-
Identify most relevant KPIs	A	R	C	-	-	-	C
Define KPI Taxonomy	R	A	C	C	-	-	-
Documentation (Activity 1 & 2)	A	R	-	-	-	-	-
Documentation (Activity 3)	R	A	-	-	-	-	-

# Topic 1: Knowledge Base and Taxonomy

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<b>MILESTONE 2</b>							
<b>Research of SOTA software tools</b>	R	A	-	-	-	-	-
<b>Database Schema Diagram</b>	R	A	-	-	C	-	-
<b>Implement the KB</b>	A	R	-	-	-	-	-
<b>Documentation (Activity 1 &amp; 2)</b>	R	A	-	-	-	-	-
<b>Documentation (Activity 3)</b>	A	R	-	-	-	-	-
<b>Test KB</b>	R	A	-	-	-	-	-

# Topic 1: Knowledge Base and Taxonomy

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<b>MILESTONE 3</b>							
Evaluate KB performance	R	A	-	-	-	-	-
Integrate KB with AI agent	A	R	-	-	-	C	-
Documentation (Activity 1)	R	A	-	-	-	-	-

# Topic 2: Data Architecture and Storage

Activity	Emiliano Sescu	Giovanni Bellini	Davide Bulotta (T6)	Francesco Paolo Liuzzi (T7)
<b>State of the art analysis</b>	R	A	-	-
<b>Scalable DB blueprint</b>	A	R	C	-
<b>Define documentation</b>	R	A	-	-
<b>Real-time data DB</b>	R	A	-	C
<b>Long-term storage DB</b>	A	R	-	C
<b>Performance and load testing</b>	A	R	-	-
<b>Evaluate &amp; improve DB performances</b>	R	A	-	-
<b>Backup &amp; disaster recovery strategy</b>	A	R	-	-

# Topic 3: Data Processing

<b>Activity</b>	Davide Cerioli	Seyed Hossein Hassanzadeh	Costanza Galante	Jacopo Raffi (T1)	Tommaso Di Riccio (T5)	Davide Marchi (T7)
<b>Raw Data Analysis for Trends, Outliers and Missing Values</b>	A	R	R	-	C	-
<b>Feature Engineering for Stationarity, Filtering and Normalization</b>	A	R	R	-	C	-
<b>Data Elaboration: Traditional Machine Learning</b>	R	R	A	-	-	-
<b>Data Elaboration: Machine Learning and Neural Networks</b>	R	A	R	C	C	C

# Topic 4: API and Integration

<b>Activity</b>	Riccardo Parente	Francesco Di Luzio	Alberto Dicembre	Jacopo Raffi (T1)	Giovanni Bellini (T2)	Davide Cerioli (T3)	Davide Bulotta (T6)	Francesco Paolo Liuzzi (T7)	Cosimo Botticelli (T8)
<b>MILESTONE 1</b>									
<b>API architecture analysis and definition of the requirements</b>	C	A	R	C	C	C	C	-	-
<b>API architecture design</b>	A	R	C	-	-	-	-	C	-
<b>API architecture design roadmap</b>	A	R	C	-	-	-	-	-	-
<b>API architecture documentation</b>	R	C	A	-	-	-	-	-	-

# Topic 4: API and Integration

<b>Activity</b>	Riccardo Parente	Francesco Di Luzio	Alberto Dicembre	Jacopo Raffi (T1)	Giovanni Bellini (T2)	Davide Cerioli (T3)	Davide Bulotta (T6)	Francesco Paolo Liuzzi (T7)	Cosimo Botticelli (T8)
<b>MILESTONE 2</b>									
Implementation of the API security access protocol	R	C	A	-	-	-	-	C	-
Configuration of the DB interaction	C	A	R	-	-	-	-	-	-
API implementation for data access (CRUD)	A	R	C	-	C	C	-	-	-
API implementation for GUI interaction	R	C	A	-	-	-	C	-	-

# Topic 4: API and Integration

Activity	Riccardo Parente	Francesco Di Luzio	Alberto Dicembre	Jacopo Raffi (T1)	Giovanni Bellini (T2)	Davide Cerioli (T3)	Davide Bulotta (T6)	Francesco Paolo Liuzzi (T7)	Cosimo Botticelli (T8)
<b>MILESTONE 3</b>									
API integration with Knowledge base	C	A	R	C	-	-	-	-	-
API integration with KPI engine	R	C	A	-	-	-	-	-	C
API integration with BI tools	C	A	R	-	-	-	-	-	-
Scalability assessment	C	R	A	-	-	-	-	-	-

# Topic 4: API and Integration

Roles	Riccardo Parente	Francesco Di Luzio	Alberto Dicembre
Integration leader	A	-	-
Test responsible	R	A	-
DevOps leader	-	A	R

# Topic 5: RAG and Generative AI

<b>Activity</b>	<b>Giuseppe De Marco</b>	<b>Michele La Barbera</b>	<b>Francesco Aliprandi</b>	<b>Tommaso Di Riccio</b>	<b>Francesco Paolo Liuzzi (T7)</b>
<b>RAG state of the art analysis</b>	R	A	C	-	-
<b>Design a RAG agent architecture for basic functionalities (user query)</b>	A	R	-	C	C
<b>Implement RAG architecture</b>	-	C	A	R	-
<b>Test of basic functionalities</b>	C	-	R	A	-
<b>Makes the agent able to produce KPI</b>	-	C	R	A	-
<b>Makes the agent able to produce dashboards</b>	R	A	-	C	-

# Topic 5: RAG and Generative AI

Activity	Giuseppe De Marco	Michele La Barbera	Francesco Aliprandi	Tommaso Di Riccio
Makes the agent able to produce resumes	A	R	-	-
Unit tests	C	-	A	R
Makes the agent able to interact correctly with real time data	R	A	C	C
Evaluation of resources needed	C	-	R	A
Final tests	A	R	-	C

# Topic 6: UI and UX

<b>Activity</b>	Alessandro Querci	Davide Bulotta	Emiliano Sescu (T2)	Francesco Di Luzio (PO)	Riccardo Parente (T4)	Riccardo Berni (T7)	Francesco Aliprandi (T5)
<b>Initial GUI mockup</b>	R	C	A	-	-	-	-
<b>Personas and User Stories</b>	C	R	-	A	-	-	-
<b>User flow wireframe</b>	R	C	A	C	-	-	C
<b>Initial frontend architecture</b>	A	R	C	-	-	C	-
<b>Global Styles and Themes for GUI</b>	R	A	C	-	-	-	-

# Topic 6: UI and UX

<b>Activity</b>	Alessandro Querci	Davide Bulotta	Emiliano Sescu (T2)	Francesco Di Luzio (PO)	Riccardo Parente (T4)	Riccardo Berni (T7)	Francesco Aliprandi (T5)
<b>Implement the basic GUI for the KPI</b>	A	R	-	-	-	-	-
<b>Style basic GUI and KPI Dashboard components</b>	R	A	C	-	-	-	-
<b>Implement the Interactive GUI for the AI agent</b>	A	R	-	-	-	-	C
<b>Style Interactive GUI components for the AI agent</b>	R	A	-	-	-	-	C
<b>Integration with Backend</b>	C	R	-	-	A	-	-
<b>Testing GUI</b>	C	A	R	-	-	-	-

# Topic 7: Security, Privacy and AI Explainability

Activity	Francesco Paolo Liuzzi	Davide Marchi	Riccardo Berni	Nicola Emmolo (T1)	Giovanni Bellini (T2)	Davide Bulotta (T6)	Davide Cerioli (T3)
<b>MILESTONE 1</b>							
<b>System Security Requirements</b>	-	A	R	-	C	-	-
<b>System Privacy Requirements</b>	R	-	A	-	-	-	-
<b>XAI Requirements and Supported critical decisions</b>	A	R	-	-	-	-	-

# Topic 7: Security, Privacy and AI Explainability

Activity	Francesco Paolo Liuzzi	Davide Marchi	Riccardo Berni	Nicola Emmolo (T1)	Giovanni Bellini (T2)	Davide Bulotta (T6)	Davide Cerioli (T3)
<b>MILESTONE 2</b>							
<b>Encryption Protocol Implementation</b>	R	-	A	C	C	-	-
<b>Access Control Implementation</b>	-	A	R	-	-	-	-
<b>First XAI Solution Implementation</b>	A	R	-	-	-	-	-

# Topic 7: Security, Privacy and AI Explainability

Activity	Francesco Paolo Liuzzi	Davide Marchi	Riccardo Berni	Nicola Emmolo (T1)	Giovanni Bellini (T2)	Davide Bulotta (T6)	Davide Cerioli (T3)
<b>MILESTONE 3</b>							
<b>System Security &amp; Privacy Testing</b>	A	-	R	-	-	C	-
<b>Security &amp; Vulnerability Report</b>	R	A	-	-	-	-	C
<b>XAI Report on supported critical decisions</b>	-	R	A	-	-	-	-

# Topic 8: KPI Calculation Engine

Activity	Cosimo Botticelli	Gemma Ragadini	Nicola Emmolo (T1)	Jacopo Raffi (T1)
Engine Architecture Design	A	R	-	-
KPI Engine Implementation	R	A	C	C
Support for Dynamic KPIs	A	R	-	-
Integration of real-time data	R	A	-	-
Testing and debugging	A	A	-	-



# RICE Matrices and Requirements

# RICE Explainability

<b>R</b>	<b>Reach:</b> in our case, how often the feature will be used by the SMO or FFM
<b>500</b>	<b>Critical for both FFM and SMO</b>
<b>400</b>	<b>Critical for one between the FFM or SMO</b>
<b>350</b>	<b>Highly accessed feature</b>
<b>300</b>	<b>Commonly used feature</b>
<b>250</b>	<b>Occasionally used</b>
<b>200</b>	<b>Useful in specific cases</b>

# RICE Explainability

I	<b>Impact:</b> qualitative analysis of how much a feature will impact the overall project
3	<b>Massive Impact</b>
2	<b>High Impact</b>
1	<b>Medium Impact</b>
0.5	<b>Low Impact</b>
0.25	<b>Minimal Impact</b>

# RICE Explainability

- **Confidence C:** an estimate of the confidence in a certain project idea, between 0 and 100%
- **Effort E:** amount of work required to develop a feature, measured in person-week

# Factory Floor Manager



# User Stories: Factory Floor Manager

As an FFM, I **want** to have real-time visibility into machine performance, because I **need** to quickly **address any downtimes**.

As an FFM, I **want** to receive automated alerts when machines have problems or are underperforming, because I **need** to **schedule maintenance efficiently**.

As an FFM, I **want** to know the peak production times, because I **need** to **optimize the work shift hours**.

As an FFM, I **want** to track material usage and inventory levels, because I **need to avoid production delays**.

As an FFM, I **want** to analyze historical machine data, because I **need** to **identify patterns, plan maintenance and prevent future downtimes**.

As an FFM, I **want** tools that help predict potential bottlenecks in the production process, because I **need** to **address them proactively**.

# User Stories: Factory Floor Manager

As an FFM, I **want** to compare machine performance across different production shifts, because I **need** to **optimize staffing and output.**

As an FFM, I **want** to easily obtain customized dashboards for different production lines, because I **need** targeted information to **make quicker and better decisions.**

As an FFM, I **want** tools that assist with periodical production-related expenses, because I **need** to **stay within budgetary constraints.**

As an FFM, I **want** to obtain a report with the energy consumption, because I **need** to **reduce costs while meeting quotas.**

As an FFM, I **want** automatic daily production reports, because I **need** to **save time and focus on managing the floor** instead of preparing reports.

As an FFM, I **want** to be periodically notified about cost-savings recommendations, because I **need** to **ensure we are optimizing operations** without my active involvement.

# Specialty Manufacturing Owner



# User Stories: Specialty Manufacturing Owner

As an SMO, I **want** a periodical high-level summary of my company's performance, because I **need** to **monitor key production metrics**.

As an SMO, I **want** to receive alerts when production costs increase unexpectedly, because I **need** to **intervene before it impacts profitability**.

As an SMO, I **want** to stay updated on major maintenance or machine investments, because I **need** to **ensure they align with my business goals**.

As an SMO, I **want** the ability to compare the performance of different production sites, because I **need** to **see which is operating most efficiently**.

As an SMO, I **want** to receive updates on significant issues that arise in production, because I **need** to **know if there are issues that are affecting the business**.

# User Stories: Specialty Manufacturing Owner

As an SMO, I **want** to receive notifications when major business milestones are reached, because I **need** to **be passively updated on significant events.**

As an SMO, I **want** automated profitability forecasts sent to me based on current trends and sales because I **need** to **understand where the business is heading.**

As an SMO, I **want** quality control summaries emailed to me because I **need** to **ensure product quality is maintained** without active monitoring.

As an SMO, I **want** tools that integrate smoothly with our current processes because I **need** to **avoid disruptions in the business** and maintain stability.

As an SMO, I **want** to control data visibility because I **need** to **restrict access to high level company information** to the other users of the application

# Topic 1: Functional Requirements

User Story	Requirement	R	I	C	E	Total
As an FFM, I <b>want</b> to have real-time visibility into machine performance, because I <b>need</b> to <b>quickly address any downtimes.</b>	KB should contains <b>Machine performance KPIs</b>	400	3	80%	0.5	960
As an FFM, I <b>want</b> tools that assist with periodical production-related expenses, because I <b>need</b> to <b>stay within budgetary constraints.</b>	KB should contains <b>Production costs KPIs</b>	400	2	80%	1	640
As an FFM, I <b>want</b> to track material usage and inventory levels, because I <b>need</b> to <b>avoid production delays.</b>	KB should contains <b>KPIs for material usage and inventory levels</b>	300	2	50%	1	300
As an FFM, I <b>want</b> to obtain a report with the energy consumption, because I <b>need</b> to <b>reduce costs while meeting quotas.</b>	KB should contains <b>Energy consumption KPIs</b>	300	0.5	80%	1	120

# Topic 1: Functional Requirements

User Story	Requirement	R	I	C	E	Total
As an SMO, I <b>want</b> a periodical high-level summary of my company's performance, because I <b>need</b> to <b>monitor key production metrics</b> .	KB should contains <b>Production KPIs</b>	400	2	80%	1	640
As an SMO, I <b>want</b> tools that integrate smoothly with our current processes because I <b>need</b> to <b>avoid disruptions in the business</b> and maintain stability.	Taxonomy should integrate <b>KPI management</b> with <b>existing processes, practices, and IT systems</b>	500	3	80%	2	600
As an SMO, I <b>want</b> to stay updated on major maintenance or machine investments, because I <b>need</b> to <b>ensure they align with my business goals</b> .	KB should contains <b>Investors KPIs and Maintenance KPIs</b>	350	2	50%	1	350
As an SMO, I <b>want</b> quality control summaries emailed to me because I <b>need</b> to <b>ensure product quality is maintained</b> without active monitoring.	KB should contains <b>Quality KPIs</b>	250	1	50%	1	125
As an SMO, I <b>want</b> the ability to compare the performance of different production sites, because I <b>need</b> to <b>see which is operating most efficiently</b> .	Taxonomy should <b>differentiate KPIs</b> based on <b>production sites</b>	250	1	70%	3	58

# Topic 2: Functional Requirements

User Story	Requirement	R	I	C	E	Total
As an FFM, I <b>want</b> to have real-time visibility into machine performance, because I <b>need</b> to quickly <b>address any downtimes</b> .	The system shall store the collected <b>machine performance data</b> in a <b>real-time data storage</b> .	500	3	90%	2	675
As an FFM, I <b>want</b> to analyze historical machine data, because I <b>need</b> to <b>identify patterns</b> , plan maintenance and <b>prevent future downtimes</b> .	The system shall store <b>previously collected machine performance data</b> in an <b>historical data storage</b> .	500	2	100%	1.5	667
As an FFM, I <b>want</b> to track material usage and inventory levels, because I <b>need</b> to <b>avoid production delays</b> .	The system shall <b>store data</b> related to <b>inventory levels, material usage</b> , and <b>KPIs</b> associated with production-related metrics.	400	2	100%	1.5	533
As an FFM, I <b>want</b> to analyze historical machine data, because I <b>need</b> to <b>identify patterns</b> , plan maintenance and <b>prevent future downtimes</b> .	The system shall <b>periodically migrate data</b> from real-time storage to historical storage.	350	2	90%	1.5	420
As an FFM, I <b>want</b> to know the peak production times, because I <b>need</b> to <b>optimize the work shift hours</b> .	The system shall support <b>querying of historical production data</b> to identify factory relevant patterns (e.g. periods of peak output).	350	1	80%	1	280

# Topic 2: Functional Requirements

User Story	Requirement	R	I	C	E	Total
As an SMO, I <b>want</b> to receive updates on significant issues that arise in production, because I <b>need</b> to know if there are <b>issues that are affecting the business</b> .	The system shall record transaction <b>logs</b> of <b>factory performance metrics with timestamps and user/machine identifiers</b> .	300	1	80%	0.5	480
As an SMO, I <b>want</b> tools that integrate smoothly with our current processes because I <b>need to avoid disruptions in the business</b> and maintain stability.	The system shall provide <b>data import/export capabilities</b> to facilitate migration and synchronization of data.	200	2	70%	1	280
As an SMO, I <b>want</b> the ability to compare the performance of different production sites, because I <b>need</b> to see <b>which site is operating most efficiently</b> .	The historical data architecture shall include <b>metadata</b> (e.g. site identifiers) <b>to distinguish and organize data from different locations</b> .	300	0.5	90%	0.5	270
As an SMO, I <b>want</b> to receive alerts when production costs increase unexpectedly, because I <b>need to intervene before it impacts profitability</b> .	The system shall maintain a <b>historical log of alerts</b> .	250	0.5	90%	0.5	225
As an SMO, I <b>want</b> a periodical high-level summary of my company's performance, because I <b>need to monitor key production metrics</b> .	The system shall <b>automatically store</b> summary <b>reports</b> .	250	0.25	90%	1.5	113

# Topic 3: Functional Requirements

User Story	Requirement	R	I	C	E	Total
As an FFM, I <b>want</b> tools that help predict potential bottlenecks in the production process, because I need to <b>address them proactively</b> .	<b>Real time data analysis</b> (classification and forecasting) quick enough to handle data streams	500	3	100%	6	250
As an FFM, I <b>want</b> to know the peak production times, because I <b>need</b> to <b>optimize the work shift hours</b> .	<b>Concept drift detection</b> for model updates	400	2	70%	4	140
As an SMO, I <b>want to receive alerts</b> when production costs increase unexpectedly, <b>because I need to intervene before it impacts profitability</b> .						
As an FFM, I <b>want to receive automated alerts when machines have problems</b> or are underperforming, <b>because I need to schedule maintenance efficiently</b> .						
As an SMO, I <b>want</b> to receive alerts when production costs increase unexpectedly, because I <b>need to intervene before it impacts profitability</b> .	<b>Online outlier</b> detection and analysis	350	1	70%	2	122

# Topic 3: Functional Requirements

User Story	Requirement	R	I	C	E	Total
As an FFM, I <b>want</b> to analyze historical machine data, because I <b>need</b> to identify <b>patterns</b> , plan maintenance and <b>prevent</b> future downtimes.	Large historical <b>dataset analysis</b> to capture trends and other data key parameters	500	3	100%	4	375
As an SMO, I <b>want</b> a periodical high-level summary of my company's performance, because I <b>need</b> to <b>monitor key production metrics</b> .						
As an FFM, I <b>want</b> tools that assist with periodical production-related expenses, because I <b>need</b> to stay within <b>budgetary constraints</b> .	<b>Seasonality detection</b> in large time series to provide accurate forecasts	500	2	80%	4	200
As an FFM, I <b>want to compare machine performance</b> across different production shifts, because I <b>need to optimize staffing and output</b> .						
As an SMO, I <b>want</b> the ability <b>to compare the performance</b> of different production sites, because I <b>need</b> to see which is operating <b>most efficiently</b> .	<b>Normalization and handling of missing data</b> points for data coming from different sources	250	1	80%	1	200

# Topic 4: Functional Requirements

User Story	Requirement	R	I	C	E	Total
As an FFM, I <b>want</b> to receive automated alerts when machines have problems or are underperforming, because I <b>need</b> to schedule <b>maintenance efficiently</b> .	<b>The system should be able to easily interface with external services (e.g. webhook)</b>	500	3	70%	2	<b>525</b>
As an FFM, I <b>want</b> to analyze historical machine data, because I <b>need</b> to <b>identify patterns, plan maintenance and prevent future downtimes</b> .	<b>The API must provide access to past machine performance data for analysis of patterns.</b>	250	2	95%	1	<b>475</b>
As an FFM, I <b>want</b> tools that assist with periodical production-related expenses, because I <b>need</b> to stay within <b>budgetary constraints</b> .	<b>The architecture shall support integration between the AI Agent and the storage</b>	500	3	90%	4	<b>337,5</b>
As an FFM, I <b>want</b> tools that help predict potential bottlenecks in the production process, because I <b>need</b> to <b>address them proactively</b> .	<b>The architecture shall support integration between the KPI Engine and the storage</b>	500	3	90%	4	<b>337,5</b>

# Topic 4: Functional Requirements

User Story	Requirement	R	I	C	E	Total
As an SMO, I <b>want</b> to receive updates on significant issues that arise in production, because I <b>need</b> to know if there are <b>issues that are affecting the business.</b>	<b>The API must notify when critical production issues arise.</b>	500	2	70%	2,5	280
As an SMO, I <b>want</b> the ability to compare the performance of different production sites, because I <b>need</b> to <b>see which is operating most efficiently.</b>	<b>The API must allow comparison of performance across different production sites.</b>	300	2	90%	2	270
As an FFM, I <b>want</b> to have real-time visibility into machine performance, because I <b>need</b> to <b>quickly address any downtimes.</b>	<b>The API must provide real-time machine performance metrics (e.g., uptime, efficiency)</b>	300	2	80%	2	240
As an SMO, I <b>want</b> to receive alerts when production costs increase unexpectedly, because I <b>need</b> to <b>intervene before it impacts profitability.</b>	<b>The API must trigger alerts for unexpected increases in production costs.</b>	250	2	90%	2	225

# Topic 4: Functional Requirements

User Story	Requirement	R	I	C	E	Total
As an FFM, I <b>want</b> tools that assist with periodical production-related expenses, because I <b>need</b> to stay within <b>budgetary constraints</b> .	<b>The API must track and report production-related expenses for budgeting purposes.</b>	300	2	80%	2.5	192
As an FFM, I <b>want</b> tools that help predict potential bottlenecks in the production process, because I <b>need</b> to <b>address them proactively</b> .	<b>The API must offer predictive insights into potential bottlenecks in the production line</b>	300	2	70%	3	140
As an FFM, I <b>want</b> to track material usage and inventory levels, because I <b>need</b> to avoid <b>production delays</b> .	<b>The API must track and return current material consumption and inventory levels.</b>	250	1	100%	2	125

# Topic 4: Functional Requirements

User Story	Requirement	R	I	C	E	Total
As an SMO, I <b>want</b> a periodical high-level summary of my company's performance, because I <b>need</b> to monitor <b>key financial and production metrics</b>	<b>The API must offer periodic summaries of the company's overall production performance.</b>	500	1	75%	3	125
As an SMO, I <b>want</b> quality control summaries emailed to me because I <b>need</b> to ensure <b>product quality</b> is maintained without active monitoring.	<b>The API must offer periodic quality control summaries.</b>	300	1	70%	2	105
As an FFM, I <b>want</b> to obtain a report with the energy consumption, because I <b>need to reduce costs while meeting quotas.</b>	<b>The API must provide reports on the energy consumption of machines and production processes.</b>	250	1	85%	2,5	85

# Topic 4: Functional Requirements

User Story	Requirement	R	I	C	E	Total
As an SMO, I <b>want</b> to stay updated on major maintenance or machine investments, because I <b>need</b> to ensure they align with my <b>business goals</b> .	<b>The API must track major maintenance events and investments, providing notifications.</b>	250	1	75%	3	62,5
As an SMO, I <b>want</b> to receive notifications when major business milestones are reached, because I <b>need</b> to be passively <b>updated on significant events</b>	<b>The API must trigger notifications for major business milestones.</b>	200	0,5	85%	2	42,5

# Topic 4: Functional Requirements

User Story	Requirement	R	I	C	E	Total
As an FFM, I <b>want</b> to be periodically notified about cost-savings recommendations, because I <b>need</b> to ensure we are <b>optimizing operations without my active involvement.</b>	<b>The API must provide periodic recommendations on operational cost-saving measures.</b>	200	1	60%	3	40
As an SMO, I <b>want</b> automated profitability forecasts sent to me based on current trends and sales because I <b>need</b> to understand <b>where the business is heading</b>	<b>The API must provide automated profitability forecasts based on current trends.</b>	200	1	60%	3	40

# Topic 5: Functional Requirements

User Story	Requirement	R	I	C	E	Total
As an SMO, I <b>want</b> to receive updates on significant issues that arise in production, because I <b>need to know if there are issues that are affecting the business.</b>	<b>Provide a concise summary of the issue, including the cause, affected production line or site.</b>	500	2	90%	1,5	600
As an FFM, I <b>want</b> to track material usage and inventory levels, because I <b>need to avoid production delays.</b>	<b>To retrieve from real-time material usage and inventory levels</b>	400	3	95%	2	570
	<b>Generate reports that summarize material usage trends and current inventory levels</b>	400	3	95%	2	570
As an FFM, I <b>want</b> to be periodically notified about cost-savings recommendations, because I <b>need to ensure we are optimizing operations</b> without my active involvement.	<b>Retrieve relevant information aimed to generate cost-saving recommendations.</b>	400	2	70%	1	560

# Topic 5: Functional Requirements

User Story	Requirement	R	I	C	E	Total
As an SMO, I <b>want</b> a periodical high-level summary of my company's performance, because I <b>need</b> to monitor key production metrics.	<b>Generate periodic performance summaries that focus on key production metrics</b>	400	3	90%	2	540
As an FFM, I <b>want</b> to know the peak production times, because I <b>need</b> to optimize the work shift hours.	<b>Generate reports on the most efficient production hours based on real-time data.</b>	300	2	85%	1	510
As an FFM, I <b>want</b> automatic daily production reports, because I <b>need</b> to save time and focus on managing the floor instead of preparing reports.	<b>Export reports in different formats (PDF, Excel)</b>	300	2	80%	1	480
As an FFM, I <b>want</b> to be periodically notified about cost-savings recommendations, because I <b>need</b> to ensure we are optimizing operations without my active involvement.	<b>Generate cost-saving recommendations, tailored to the FFM's production context.</b>	400	3	80%	2	480

# Topic 5: Functional Requirements

User Story	Requirement	R	I	C	E	Total
As an FFM, I <b>want</b> to obtain a report with the energy consumption, because I <b>need</b> to <b>reduce costs while meeting quotas</b> .	<b>Compare energy usage with production quotas and provide cost-saving suggestions (inefficient machinery)</b>	400	3	90%	3	360
As an SMO, I <b>want</b> quality control summaries emailed to me because I <b>need</b> to <b>ensure product quality is maintained</b> without active monitoring.	<b>Generate periodic (daily, weekly, or monthly) quality control summaries to the SMO's email.</b>	300	2	85%	1,5	340
As an FFM, I <b>want</b> to know the peak production times, because I <b>need</b> to <b>optimize the work shift hours</b> .	<b>To retrieve from real-time production data</b>	300	2	80%	1,5	320
As an FFM, I <b>want</b> automatic daily production reports, because I <b>need</b> to <b>save time and focus on managing the floor</b> instead of preparing reports.	<b>Generate reports upon request (e.g., "Send today's production report") that summarize daily production KPI and info</b>	400	2	80%	2	320

# Topic 5: Functional Requirements

User Story	Requirement	R	I	C	E	Total
As an FFM, I <b>want</b> to easily obtain customized dashboards for different production lines, because I <b>need</b> targeted information to <b>make quicker and better decisions.</b>	<b>Autonomously creation of customizable dashboards that display KPIs and metrics specific to each production line</b>	350	3	90%	3	315
As an SMO, I <b>want</b> the ability to compare the performance of different production sites, because I <b>need</b> to <b>see which is operating most efficiently.</b>	<b>Getrieve production data from different sites.</b>	350	2	85%	2	298
	<b>Generate reports highlighting discrepancies in different sites and point out the best-performing site.</b>	350	2	85%	2	298
As an FFM, I <b>want</b> tools that assist with periodical production-related expenses, because I <b>need</b> to <b>stay within budgetary constraints.</b>	<b>To retrieve real-time expense data for each production line</b>	350	2	80%	2	280

# Topic 5: Functional Requirements

User Story	Requirement	R	I	C	E	Total
As an FFM, I <b>want</b> tools that assist with periodical production-related expenses, because I <b>need</b> to stay within budgetary constraints.	<b>Generate reports based on user-defined time periods and pre-set budget limits</b>	350	2	80%	2	280
As an SMO, I <b>want</b> to receive updates on significant issues that arise in production, because I <b>need</b> to know if there are issues that are affecting the business.	<b>Prioritize significant issues for the SMO based on their potential impact on business outcomes, sending the most critical notifications first.</b>	500	1	80%	1,5	267
As an FFM, I <b>want</b> to obtain a report with the energy consumption, because I <b>need</b> to reduce costs while meeting quotas.	<b>To retrieve the energy consumption for each production line</b>	300	2	80%	2	240
As an FFM, I <b>want</b> to analyze historical machine data, because I <b>need</b> to identify patterns, plan maintenance and prevent future downtimes.	<b>Generate comprehensive reports that analyze historical machine data, highlighting key operational patterns.</b>	250	1	90%	1	225

# Topic 5: Functional Requirements

User Story	Requirement	R	I	C	E	Total
As an SMO, I <b>want</b> to stay updated on major maintenance or machine investments, because I <b>need</b> to ensure <b>they align with my business goals.</b>	<b>Retrieve maintenance status and machine investment updates</b>	300	1	75%	1	225
As an FFM, I <b>want</b> to analyze historical machine data, because I <b>need</b> to <b>identify patterns, plan maintenance and prevent future downtimes.</b>	<b>Provide data-driven maintenance recommendations based on the patterns identified in the historical machine data.</b>	250	2	80%	2	200
As an FFM, I <b>want</b> to be periodically notified about cost-savings recommendations, because I <b>need</b> to <b>ensure we are optimizing operations without my active involvement.</b>	<b>Generate new KPIs based on real-time data trends to optimize cost-efficiency and operational performance.</b>	250	2	80%	2	200
As an FFM, I <b>want</b> to obtain a report with the energy consumption, because I <b>need</b> to <b>reduce costs while meeting quotas.</b>	<b>Generate energy consumption reports (daily, weekly, monthly..) upon request</b>	300	2	85%	3	170

# Topic 5: Functional Requirements

User Story	Requirement	R	I	C	E	Total
As an FFM, I <b>want</b> automatic daily production reports, because I <b>need</b> to <b>save time and focus on managing the floor</b> instead of preparing reports.	<b>Allow customization of the report format and the data included</b>	250	1	80%	1,5	133
As an FFM, I <b>want</b> to easily obtain customized dashboards for different production lines, because I <b>need</b> targeted information to <b>make quicker and better decisions</b> .	<b>Fetch and display dashboards upon request</b>	300	1	85%	2	128
As an SMO, I <b>want</b> to stay updated on major maintenance or machine investments, because I <b>need</b> to <b>ensure they align with my business goals</b> .	<b>Generate summaries that focus on significant maintenance and machine investments</b>	300	1	75%	2	113
As an SMO, I <b>want</b> to receive notifications when major business milestones are reached, because I <b>need</b> to <b>be passively updated on significant events</b>	<b>Retrieve business milestones informations and track progress toward production targets</b>	300	1	75%	2	113

# Topic 5: Functional Requirements

User Story	Requirement	R	I	C	E	Total
As an SMO, I <b>want</b> to receive notifications when major business milestones are reached, because I <b>need</b> to <b>be passively updated on significant events</b>	<b>Generate a summary report of milestones, including context and trends.</b>	300	1	75%	2	113
As an FFM, I <b>want</b> to analyze historical machine data, because I <b>need</b> to <b>identify patterns, plan maintenance and prevent future downtimes.</b>	<b>To retrieve historical machine data</b>	250	1	85%	2	106

# Topic 6: Functional Requirements

User Story	Requirement	R	I	C	E	Total
As an FFM, I <b>want</b> to have real-time visibility into machine performance, because I <b>need</b> to quickly <b>address any downtimes</b> .	The dashboards informations need to be updated constantly to allow real-time monitoring	500	3	70%	3	350
	The GUI should have dashboard elements for shopfloor-related KPIs (e.g., uptime, downtime, speed).	500	3	80%	3	400
As an FFM, I <b>want</b> to receive automated alerts when machines have problems or are underperforming, because I <b>need</b> to <b>schedule maintenance efficiently</b> .	The system should have a notification system to alert the user if anomalies are detected or thresholds reached	500	2	85%	3	283
	The system should allow users to set thresholds and milestones for specific KPIs to trigger notifications.	350	3	80%	2	280
As an FFM, I <b>want</b> to know the peak production times, because I <b>need</b> to <b>optimize the work shift hours</b> .	The dashboards should be able to display statistic information about the graphs (peak/avg/etc.) and filter by time frame	350	2	80%	2	280
As an FFM, I <b>want</b> to track material usage and inventory levels, because I <b>need</b> to avoid production delays.	The GUI should have dashboards elements track inventory levels, materials consumption and expenses.	300	3	80%	3	240

# Topic 6: Functional Requirements

User Story	Requirement	R	I	C	E	Total
As an FFM, I <b>want</b> to analyze historical machine data, because I <b>need</b> to <b>identify patterns, plan maintenance and prevent future downtimes.</b>	<b>The frontend should provide a section where users can review historical data and inspect the patterns detected</b>	300	1	85%	2	128
As an FFM, I <b>want</b> tools that help predict potential bottlenecks in the production process, because I <b>need</b> to <b>address them proactively.</b>	<b>The dashboards should be able to visualize production pipelines to predict or optimize resource flow and suggest possible bottlenecks or optimizations.</b>	400	2	70%	4	140
As an FFM, I <b>want</b> to easily obtain customized dashboards for different production lines, because I <b>need</b> targeted information to <b>make quicker and better decisions.</b>	<b>The GUI should allow to compare dashboard informations between different production sites.</b>	300	2	85%	2	255
	<b>The frontend should allow the creation of custom dashboards, starting from templates or most used dashboards.</b>	200	2	75%	3	100

# Topic 6: Functional Requirements

User Story	Requirement	R	I	C	E	Total
As an FFM, I <b>want</b> automatic daily production reports, because I <b>need</b> to <b>save time and focus on managing the floor</b> instead of preparing reports.	<b>The frontend should provide a section to see, export and share the generated reports.</b>	300	1	80%	2	120
	<b>The frontend should allow the user to customize the frequency and KPIs for the generation of the reports.</b>	350	1	85%	2	149
As an FFM, I <b>want</b> to be periodically notified about cost-savings recommendations, because I <b>need to ensure we are optimizing operations</b> without my active involvement.	<b>The frontend should provide a section to review the raccomandations and other notifications received</b>	200	1	70%	2	70
As an SMO, I <b>want</b> quality control summaries emailed to me because I <b>need</b> to <b>ensure product quality is maintained</b> without active monitoring.	<b>The frontend should allow the users to adjust where summaries and reports are received (ex. mail) and what to include in them</b>	300	2	85%	2	255
As an SMO, I <b>want</b> to control data visibility because I <b>need</b> to <b>restrict access to high level company information</b> to the other users of the application	<b>The frontend should show/hide KPIs based on user permissions</b>	200	2	80%	1	480

# Topic 7: Functional Requirements

User Story	Requirement	R	I	C	E	Total
As an FFM, I <b>want</b> tools that help predict potential bottlenecks in the production process, because I <b>need</b> to <b>address them proactively</b> .	<b>Bottleneck predictions must show a confidence score</b>	400	2	90%	2	360
As an SMO, I <b>want</b> automated profitability forecasts sent to me based on current trends and sales because I <b>need</b> to <b>understand where the business is heading</b> .	<b>Display key data points and trends used to generate the forecast (e.g., recent sales, machine performance, seasonality)</b>	400	3	90%	4	270
As an FFM, I <b>want</b> tools that help predict potential bottlenecks in the production process, because I <b>need</b> to <b>address them proactively</b> .	<b>Display most relevant features used to obtain the bottleneck prediction</b>	300	3	85%	3	255

# Topic 7: Functional Requirements

User Story	Requirement	R	I	C	E	Total
As an SMO, I <b>want</b> automated profitability forecasts sent to me based on current trends and sales because I <b>need</b> to <b>understand where the business is heading.</b>	<b>Forecasting must show a confidence score</b>	400	2	85%	3	227
As an SMO, I <b>want</b> to receive updates on significant issues that arise in production, because I <b>need</b> to <b>know if there are issues that are affecting the business.</b>	<b>Provide detailed, data-backed reasons for production anomalies (e.g., machine failure, unusual material usage)</b>	350	3	80%	4	210
As an SMO, I <b>want</b> to receive alerts when production costs increase unexpectedly, because I <b>need</b> to <b>intervene before it impacts profitability.</b>	<b>Include a brief description of why a data point was flagged as an outlier (e.g., deviation from historical average, abnormal patterns).</b>	300	3	85%	3	191

# Topic 7: Functional Requirements

User Story	Requirement	R	I	C	E	Total
As an FFM, I <b>want</b> to analyze historical machine data, because I <b>need</b> to <b>identify patterns, plan maintenance and prevent future downtimes.</b>	<b>Show recognized pattern with previous instances and similarity scores</b>	400	2	90%	4	180
As an FFM, I <b>want</b> to easily obtain customized dashboards for different production lines, because I <b>need</b> targeted information to <b>make quicker and better decisions.</b>	<b>Display sources used to generate a personalized dashboard as footnotes or in-line refs.</b>	250	1	80%	2	100

# Topic 8: Functional Requirements

User Story	Requirement	R	I	C	E	Total
As an SMO, I <b>want</b> to receive alerts when production costs increase unexpectedly, because I <b>need</b> to <b>intervene before it impacts profitability.</b>	<b>Generate an alert when KPIs related to production costs go above a certain threshold</b>	400	3	100%	2	600
As an SMO, I <b>want</b> to receive updates on significant issues that arise in production, because I <b>need</b> to <b>know if there are issues that are affecting the business.</b>	<b>Identify KPI values that indicate production issues and generate alerts accordingly</b>	500	2	90%	2	450
As an FFM, I <b>want</b> to receive automated alerts when machines have problems or are underperforming, because I <b>need</b> to <b>schedule maintenance efficiently.</b>	<b>Calculate KPIs as defined by the taxonomy</b>	500	3	100%	4	375

# Topic 8: Functional Requirements

User Story	Requirement	R	I	C	E	Total
As an SMO, I <b>want</b> to receive notifications when major business milestones are reached, because I <b>need</b> to <b>be passively updated on significant events.</b>	<b>Identify KPI values that indicate major business milestones and generate alerts accordingly</b>	350	2	90%	2	315
As an FFM, I <b>want</b> automatic daily production reports, because I <b>need</b> to <b>save time and focus on managing the floor</b> instead of preparing reports.	<b>Generate a report with a cyclicity of 24 hours</b>	350	2	95%	4	166

# Topic 8: Functional Requirements

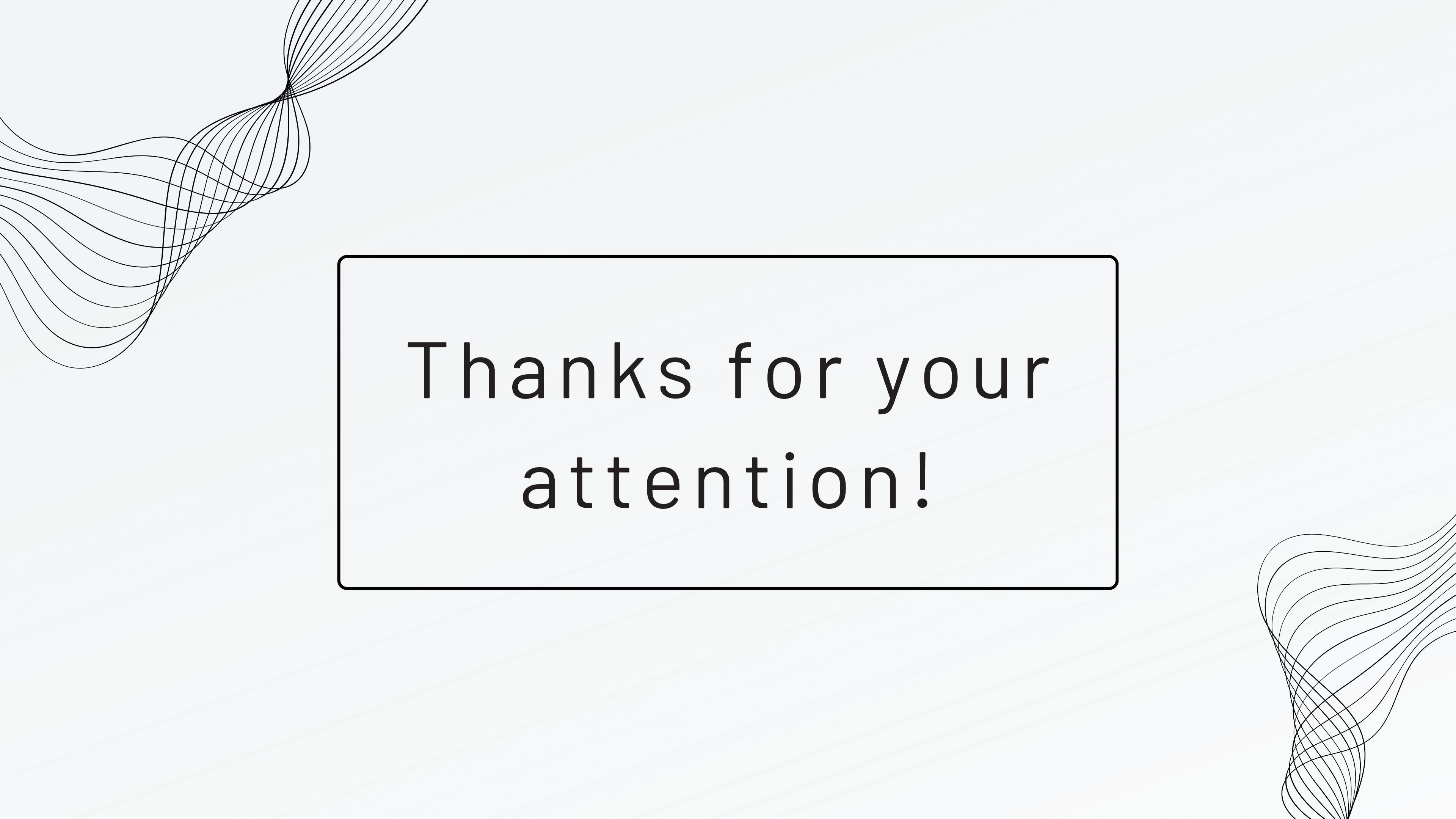
User Story	Requirement	R	I	C	E	Total
As an FFM, I <b>want</b> to receive automated alerts when machines have problems or are underperforming, because I <b>need</b> to <b>schedule maintenance efficiently</b> .	<b>Generate alert whenever production reaches certain thresholds (high for peak production, low for underperformance)</b>	400	1	80%	2	160
As an FFM, I <b>want</b> to know the peak production times, because I <b>need</b> to <b>optimize the work shift hours</b> .						

# Topic 8: Functional Requirements

User Story	Requirement	R	I	C	E	Total
As an FFM, I <b>want</b> to obtain a report with the energy consumption, because I <b>need</b> to <b>reduce costs while meeting quotas.</b>	<b>Take into account the energy consumption whenever data for it is available during KPI calculation</b>	250	1	70%	3	58
As an FFM, I <b>want</b> to compare machine performance across different production shifts, because I <b>need</b> to <b>optimize staffing and output.</b>	<b>Differentiate KPI calculation based on shift times</b>	250	1	70%	3	58

Category	Non Functional Requirements
Data Handling Performance	<b>The system must efficiently handle large data volumes during ingestion and querying with minimal latency, ensuring smooth real-time monitoring.</b>
High Availability & Fault Tolerance	<b>Provide continuous operation with minimal downtime and ensure data integrity through regular backups and failover mechanisms.</b>
Data Security	<b>Encrypt all stored and transmitted data using industry standards (e.g., AES-256), and secure API access through authenticated, encrypted communications.</b>
Time-Series Optimization	<b>Optimize storage specifically for time-series data to support fast retrieval and analysis for real-time insights.</b>
System Integration	<b>The taxonomy and architecture must integrate seamlessly with existing processes, IT systems, and KPIs, adapting to operational needs.</b>
Multi-language support	<b>The system must fully support English, Italian and French.</b>

Category	Non Functional Requirements
AI driven system	<b>The AI agent must support smart retrieval and generation</b>
Scalability and Offline Operation	<b>Ensure the system scales effectively for increased workload demands and maintains core functionalities even when operating offline.</b>
Efficient UX	<b>Design the interface to provide shortcuts for expert users while keeping essential features easily accessible, ensuring efficiency for both novice and experienced users.</b>
AI Model Interpretability	<b>Ensure AI outputs are accompanied by clear, non-technical explanations for non-technical stakeholders to easily understand insights.</b>
Precision in Real-Time Dashboards	<b>Ensure high accuracy and granularity in real-time dashboards, particularly for low-level metrics (e.g., hourly data).</b>
Regulation Compliance	<b>The system must be compliant with the more recent AI &amp; Privacy regulations like GDPR and the AI Act</b>



Thanks for your  
attention!