

View	Paradigm	Product	Project	Process
Value	Reflection	Transaction	Reasoning	Appreciation
<i>Rationale: Why?</i>	<p><b>Challenge:</b> It is hard to acquire labeled training data with features from ubiquitous devices suitable for human dynamics related MI modelling.</p> <p><b>Problem:</b> It requires a lot of effort to obtain reality related data suitable for MI models. Every time someone need to gather new knowledge in this area, they have to create a system to facilitate the data collection and find people willing to participate.</p>	<p><b>Key technologies:</b></p> <ul style="list-style-type: none"><li>• Smartphones</li><li>• Sensors in ubiquitous (mobile/wearable) devices<ul style="list-style-type: none"><li>◦ GPS, accelerometer, gyroscope, ...</li></ul></li><li>• Client/Server</li><li>• <i>External sensors (IoT-devices)</i></li></ul>	<p><b>Vision:</b> uMiner - A platform which facilitates customized data collection, through a specification, from sensors in ubiquitous devices and collection of labels with context such that the data is suitable for MI models.</p> <p><b>Warrant:</b> Interested parties will be able to utilize the technologies to improve both scientific and commercial products by building better models for understanding human dynamics based on the collected training data.</p>	<p><b>Rationale review:</b> Expectations:</p> <ul style="list-style-type: none"><li>• Context can be labeled by questionnaires</li><li>• MI models describing human dynamics can, with less effort, be created based on ubiquitous sensors and labels.</li></ul>
<i>Strategy: What?</i>	<p><b>Key elements:</b></p> <ul style="list-style-type: none"><li>• Snapshots of context (collection of sensor data with questionnaire answers)</li><li>• Questionnaires (to derive labels)</li><li>• Willing participants</li><li>• Campaign specification (of wanted training data)</li><li>• Enrollment</li><li>• Customers in need of labeled training data</li><li>• Snapshot upload</li></ul>	<p><b>Key components:</b></p> <ul style="list-style-type: none"><li>• Sensor data gathering module</li><li>• Graphical interface for Digital Questionnaires</li><li>• Enrollment graphical interface</li><li>• Campaign specification declaration graphical interface</li><li>• Snapshot retrieval interface</li><li>• Service for upload of snapshots</li></ul>	<p><b>Justification:</b> <i>Backing:</i></p> <ul style="list-style-type: none"><li>• Easily configurable platform for specification</li><li>• Scalable</li></ul> <p><i>Qualifier:</i></p> <ul style="list-style-type: none"><li>• No direct motivation for participants</li></ul> <p><i>Rebuttal:</i></p> <ul style="list-style-type: none"><li>• The customers need to persuade the participants anyhow</li></ul>	<p><b>Strategy review:</b> Expectations:</p> <ul style="list-style-type: none"><li>• The customers are able to persuade the participants to enroll in campaigns.</li><li>• The system is able to handle an increasing amount of customers and participants.</li><li>• The key components are sufficient to establish a platform that grants customers access to the training data they need.</li></ul>
<i>Tactics: How?</i>	<p><b>Key scenarios:</b></p> <ul style="list-style-type: none"><li>• Sensors in ubiquitous devices monitoring participants' contexts</li><li>• Participants answering questionnaires</li><li>• Customers specifying campaigns</li></ul>	<p><b>Key features:</b></p> <ul style="list-style-type: none"><li>• Passive gathering of sensor inputs from ubiquitous devices</li><li>• Active labeling of gathered data</li><li>• Storing and distribution of snapshots</li><li>• Storing and distribution of campaign specifications</li></ul>	<p><b>Key mapping:</b></p> <ul style="list-style-type: none"><li>• Monitoring participants' contexts rely on passively gathering sensor data and storing them persistently</li><li>• Active labelling of gathered data rely on answers of questionnaire</li><li>• Storing and distribution of campaign specification rely on customers specifying campaigns</li></ul>	<p><b>Tactics review:</b> Expectations:</p> <ul style="list-style-type: none"><li>• Passive gathering of sensor input and active labeling will be possible if the customers have specified a campaign and the participants are being monitored and answer questionnaires.</li><li>• uMiner will monitor the context of the participants and have them answer questionnaires based on how the customers specified the campaign.</li></ul>