**INNOVATION QUESTIONNAIRE**

**TEMPLATE**

For each innovation that the project will develop / has developed please answer the questions below:

**Title of the innovation \***

*MAX ES: Autonomous vehicle for delivery in industrial environments*

**Describe the innovation (in less than 1000 characters, spaces included) \***

*Text of 1 to 1000 characters will be accepted (still 1 more characters expected)*

The project developed an autonomous vehicle for navigation in an industrial environment, specifically an aluminium production plant. The product can carry heavy loads, as demonstrated for loading and unloading of aluminium anodes during the experimental tests. Suitable autonomous docking and navigation systems were developed, and navigation is expected to be performed both indoors and outdoors. Safety considerations for navigation (respecting current traffic rules within the factory), and for interaction with humans (human detection, safety systems) were also developed and integrated. The robot was tested in a realistic environment, and there are still ongoing activities related to a complete testing campaign and business case development.

**Is the innovation developed within the project ... \***

*XX a) Under development*

b) Already developed but not yet being exploited

c) being exploited

*Many subcomponents are already developed, including energy management, handling, propulsion, steering, signaling and docking. Navigation (both outdoors and indoors) and mission supervision system are still to be finished. Characterization tests for real performance are still to be performed.*

**Characterise the type of innovation \***

* Significantly improved product
* Significantly improved service (except consulting ones)
* Significantly improved process
* Significantly improved marketing method
* Significantly improved organisational method
* Consulting services
* *XX New product*
* New service (except consulting ones)
* New process
* New marketing method
* New organisational method
* Other

*No equivalent system exists in the world. This is a new product adjusted to the needs of the mining industry.*

**Is the innovation to be introduced to the market or to be deployed within a partner \***

* Introduced new to the market (commercial exploitation)
* *XX Deployed within a partner (internal exploitation: Changes in organisation, new internal processes implemented, etc.)*
* No exploitation planned

*At the current level, the development will be used and exploited by one of the partners. However, the consortium foresees already a good business opportunity, and suitable exploitation and business plans are still to be developed.*

**Is there a clear owner of the innovation in the consortium or multiple owners? \***

* A clear owner
* *XX Multiple owners*

*The product was mainly developed by ECA with contribution from RTA. Some patents have already been filed.*

**Indicate the step(s) already done (or are foreseen) in the project in order to bring the innovation to (or closer to) the market**

* Done or ongoing
* Planned in project
* Not planned in project but needed/desirable
* Not planned in project and not needed

*Suitable exploitation and business plans are still to be developed. Preliminary market estimation was presented in the project proposal, and the consortium reported several dissemination activities that helped them to acquire relevant contacts interested in the product.*

|  |  |
| --- | --- |
| *Technology transfer* | Planned |
| *Engagement of both research team and partner's business units in project activities* | Planned |
| *Business plan* | Needed |
| *Market study* | Ongoing |
| *Prototyping in laboratory environment* | Done |
| *Prototyping in real world environment* | Ongoing |
| *Pilot, Demonstration or Testing activities* | Ongoing |
| *Feasibility study* | Done |
| *Launch a start-up or spin-off* | Not planned / not needed |
| *Standardisation* | Not planned / not needed |
| *Application for private or public investment* | Not planned / not needed |
| *Securing private investment* | Not planned / not needed |
| *Securing public investment* | Not planned / not needed |
| *Other (please specify)* |  |

If other, please specify

**Indicate which participant(s) (up to a maximum of 3) is/are the key organisation(s) in the project delivering this innovation. For each of these identify under the next question their needs to fulfil their market potential. \***

Organisation 1 ECA Robotics

Organisation 2 Rio Tinto Alcan (RTA)

Indicate their needs to fulfil their market potential

Organisation1

* Investor readiness training
* Investor introductions
* Biz plan development exploitation plan to be developed
* Expanding to more markets
* Legal advice (IPR or other): licensing concept still to be developed
* Mentoring
* Partnership with other company (technology or other)
* Incubation
* Startup accelerator

Organisation2 Create suitable exploitation and business plans

* Investor readiness training
* Investor introductions
* Biz plan development: exploitation, commercial, and business plans still to be developed
* Expanding to more markets
* Legal advice (IPR or other): licensing negotiations with ECA must be performed
* Mentoring
* Partnership with other company (technology or other)
* Incubation
* Startup accelerator

**Market size: What is the approximate market size for this innovation \***

* < €25M
* *X €25M - €100M*
* €100M - €250M
* €250M - €500M
  + €500M
* Not known
* € amounts are for global markets and per year

**Market maturity: The market for this innovation is ... \***

* Not yet existing: customers are not buying such products (or are not yet ready to buy such products/services)
* *X Emerging: There is a growing demand and few offerings are available*
* Mature: The market is already supplied with many products of the type proposed

**Level of innovation: What is the level of innovation \***

* No innovation - other factors contribute to viability
* Some distinct, probably minor, improvements over existing products
* Innovative but could be difficult to convert customers
* *X Obviously innovative and easily appreciated advantages to customer*
* Very innovative satisfies a well-known market need

**Market competition: How strong is competition in the target market? \***

* *X Patchy, no major players*
* Established competition but none with a proposition like the one under investigation
* Several major players with strong competencies, infrastructure and offerings

**When do you expect that such innovation could be commercialised? \***

* Less than 1 year
* *X Between 1 and 3 years*
* Between 3 and 5 years
* More than 5 years