**INNOVATION QUESTIONNAIRE**

**TEMPLATE**

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

**Title of the innovation \***

*Integrated servo actuator (ISA)*

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

*Prior hydraulic actuators were custom made from a piston, a servo valve, interconnecting hoses, pressure and position sensors, and electronic control board. Custom assemblies are tedious to design, spacious, and heavy. Hoses and electronics are exposed. Long hoses and their elasticities are documented to lower efficiencies, although exact amounts of pressure loss, or pressure build-up delay are unknown to me.*

***The ISA largely applies 3d metal printing, into an integrated design.*** *This shortens hose lengths to a minimum. Rigid flow channels reduce delays, compared to hoses. Integration improves ruggedness, and final actuator weight. ISA end users can focus on 'plug and use' instead of iterating through design and testing cycles. Two piston sizes were discussed. Integration seems not to hinder adapting piston sizes.*

*Efficiency: the currently utilized ISA servo valve is still a flow powered valve (inefficient). New valve designs seem to be on the way, but were not yet integrated.*

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

c) being exploited

**Characterise the type of innovation \***

Significantly improved product

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

Introduced new to the market (commercial exploitation)

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

A clear owner

**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

|  |  |
| --- | --- |
| *Technology transfer* | ISA is being deployed to customers, for initial testing. |
| *Engagement of both research team and partner's business units in project activities* | Moog only. |
| *Business plan* | not indicated |
| *Market study* | not indicated |
| *Prototyping in laboratory environment* | yes |
| *Prototyping in real world environment* | Moog: first customers test ISA, race car companies |
| *Pilot, Demonstration or Testing activities* | Pilot demo worked only partially. |
| *Feasibility study* | not indicated |
| *Launch a start-up or spin-off* | not shown |
| *Standardisation* | 2 piston sizes discussed. 1-size product shown. Not further info. |
| *Application for private or public investment* | with Moog |
| *Securing private investment* | not indicated |
| *Securing public investment* | not indicated |
| *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. \***

*Moog*

Indicate their needs to fulfil their market potential

*None of the suggestions are within my expertize.*

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

Not known

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

Emerging: There is a growing demand and few offerings are available

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

Obviously innovative and easily appreciated advantages to customer

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

Established competition but none with a proposition like the one under investigation

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

Between 1 and 3 years