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THE FRENCH AEROSPACE LAB

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Simulation Software Ecosystem Problematic

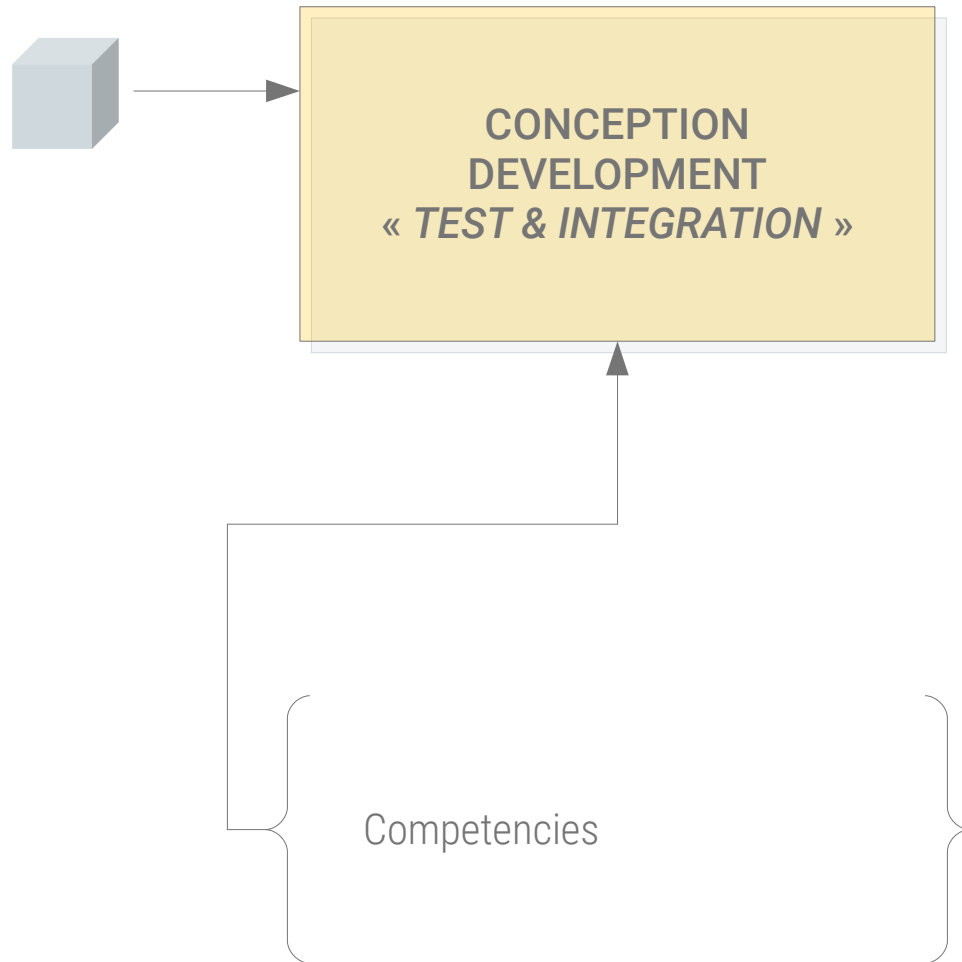
simulation_software_ecosystem-> Problematic

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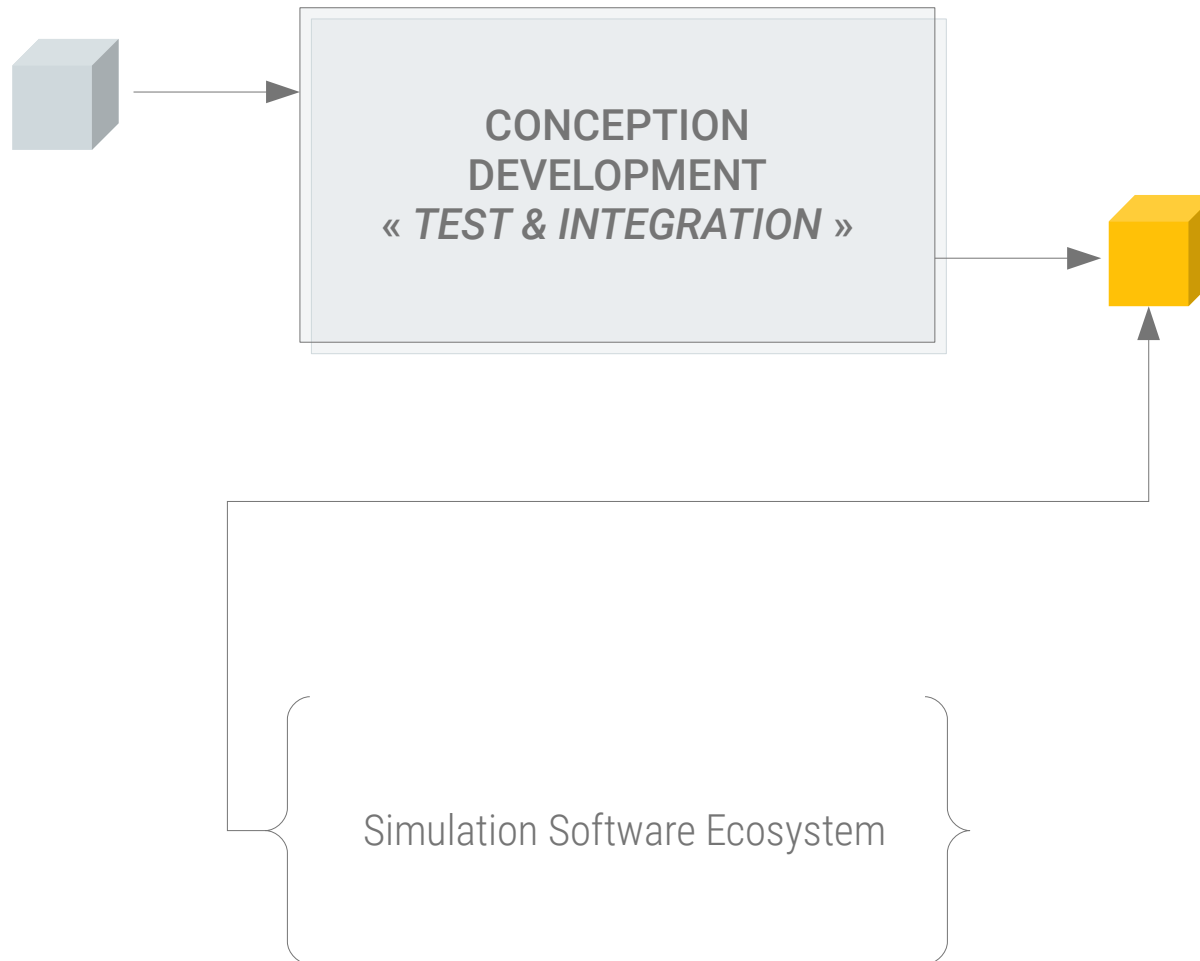


LABSIM team

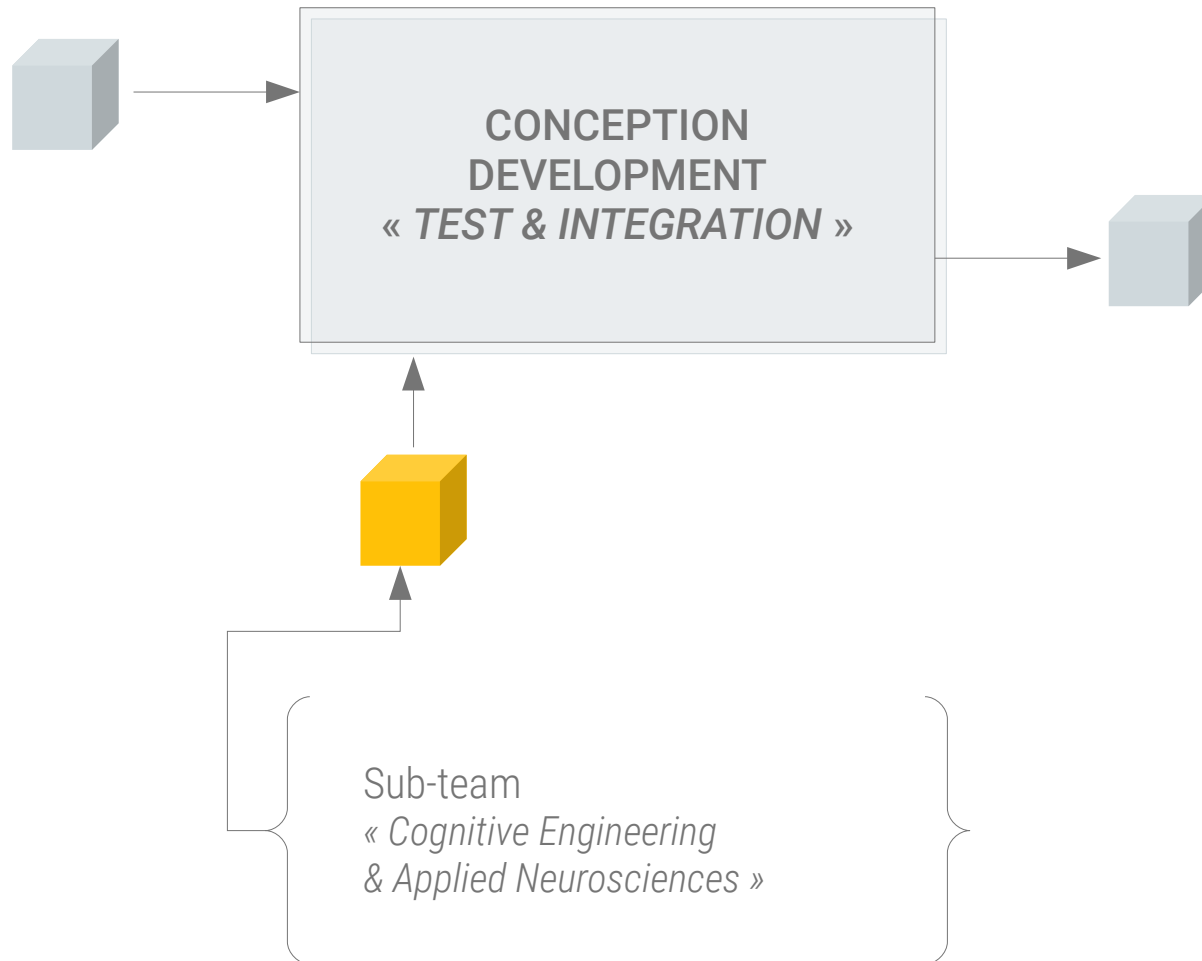
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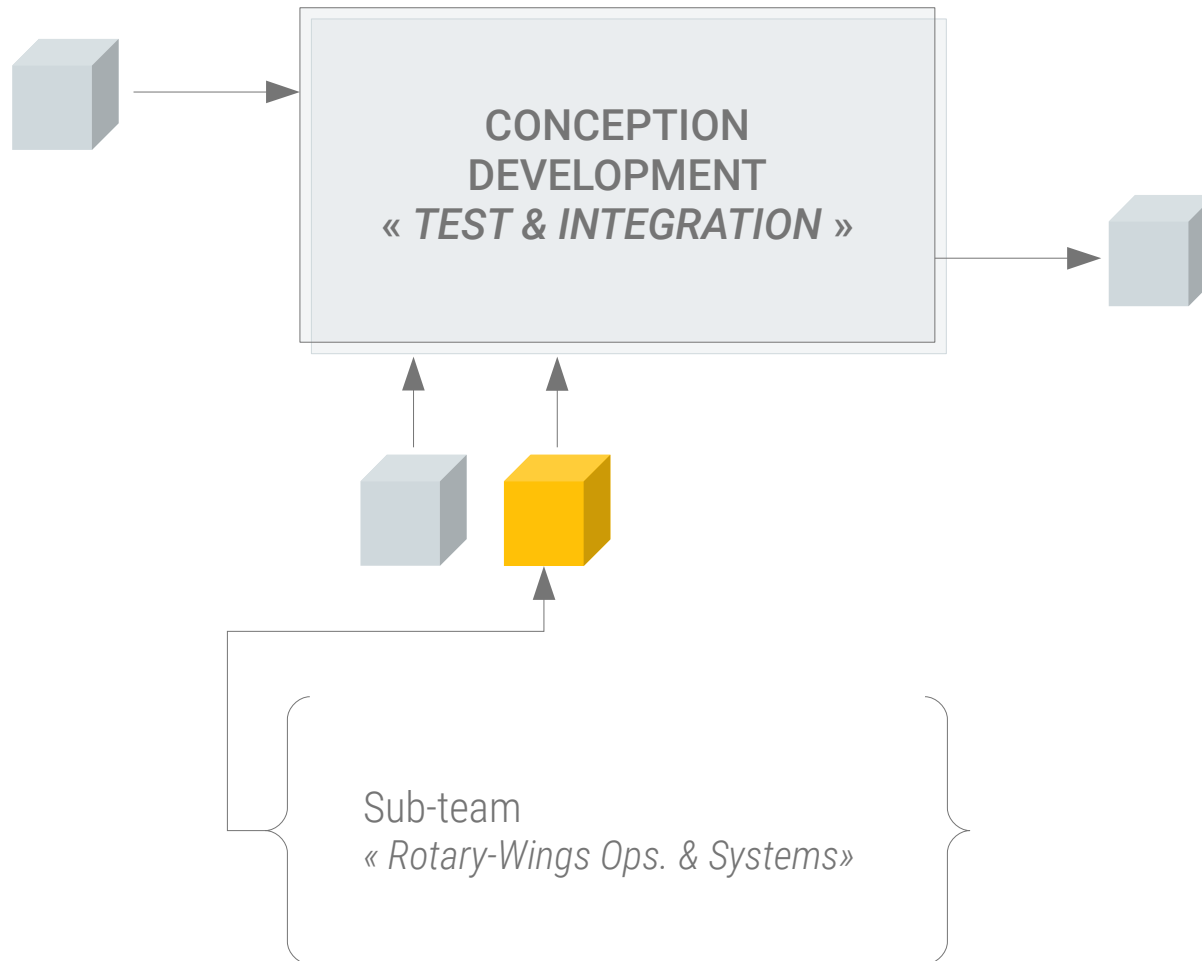
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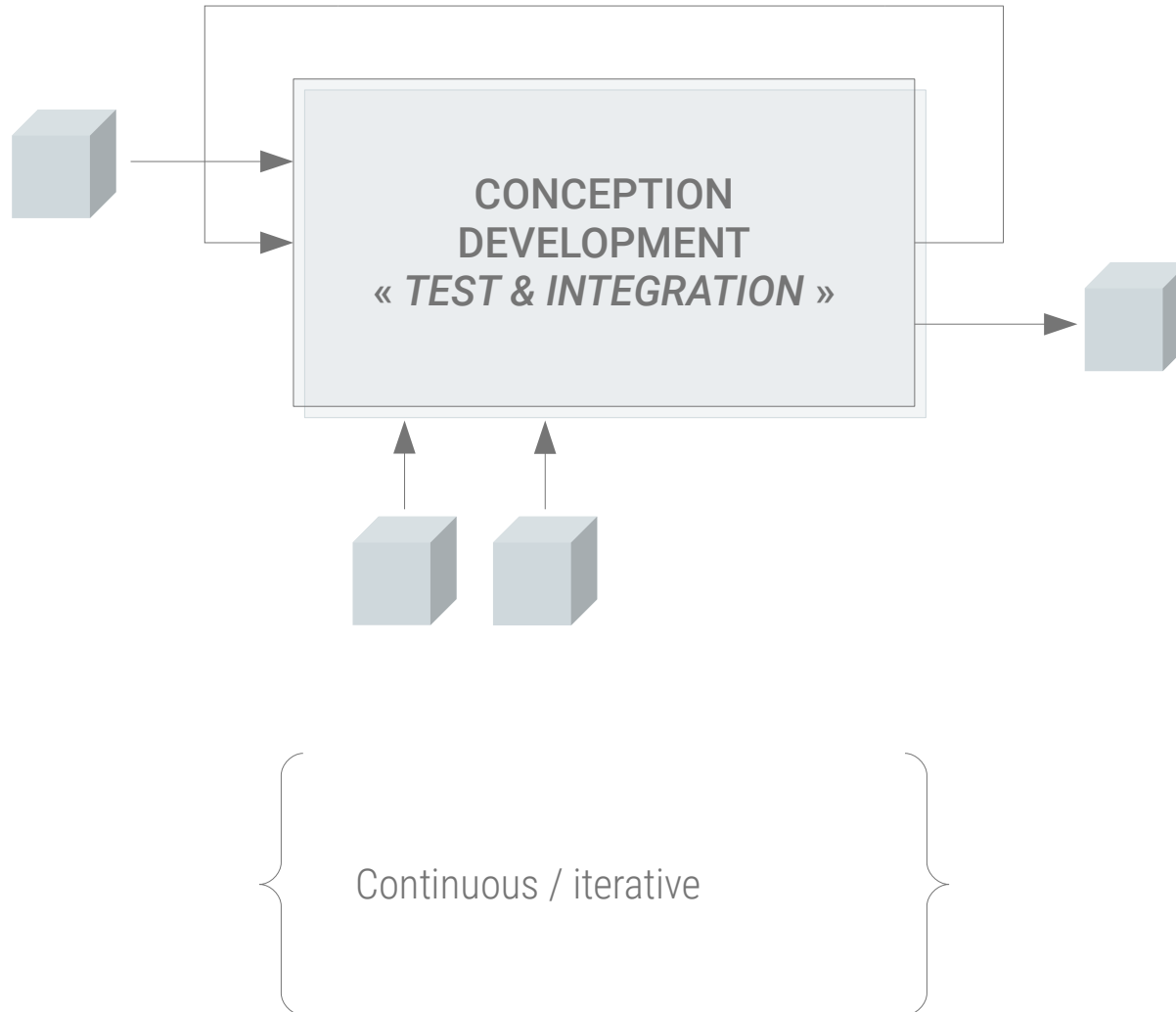
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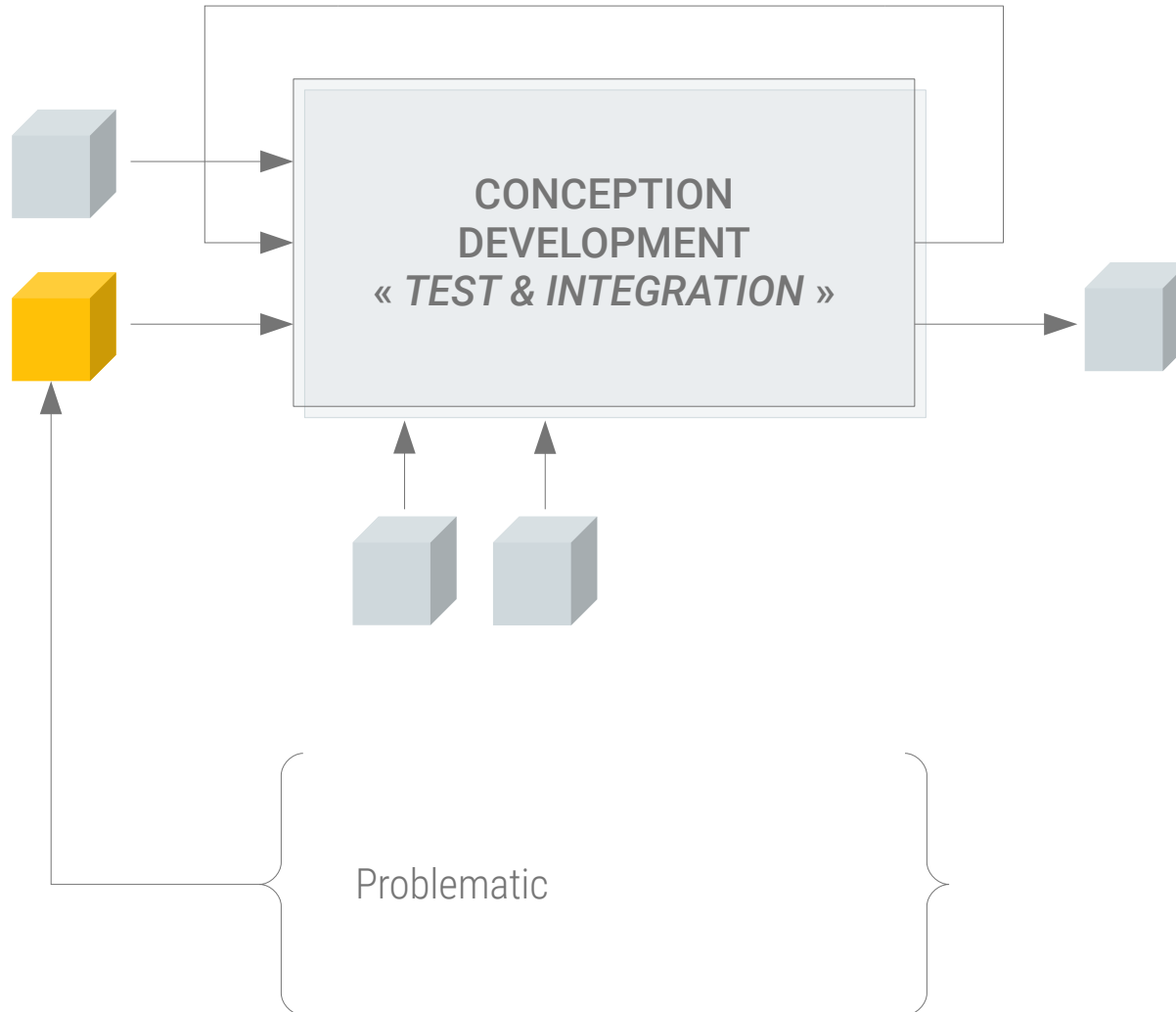
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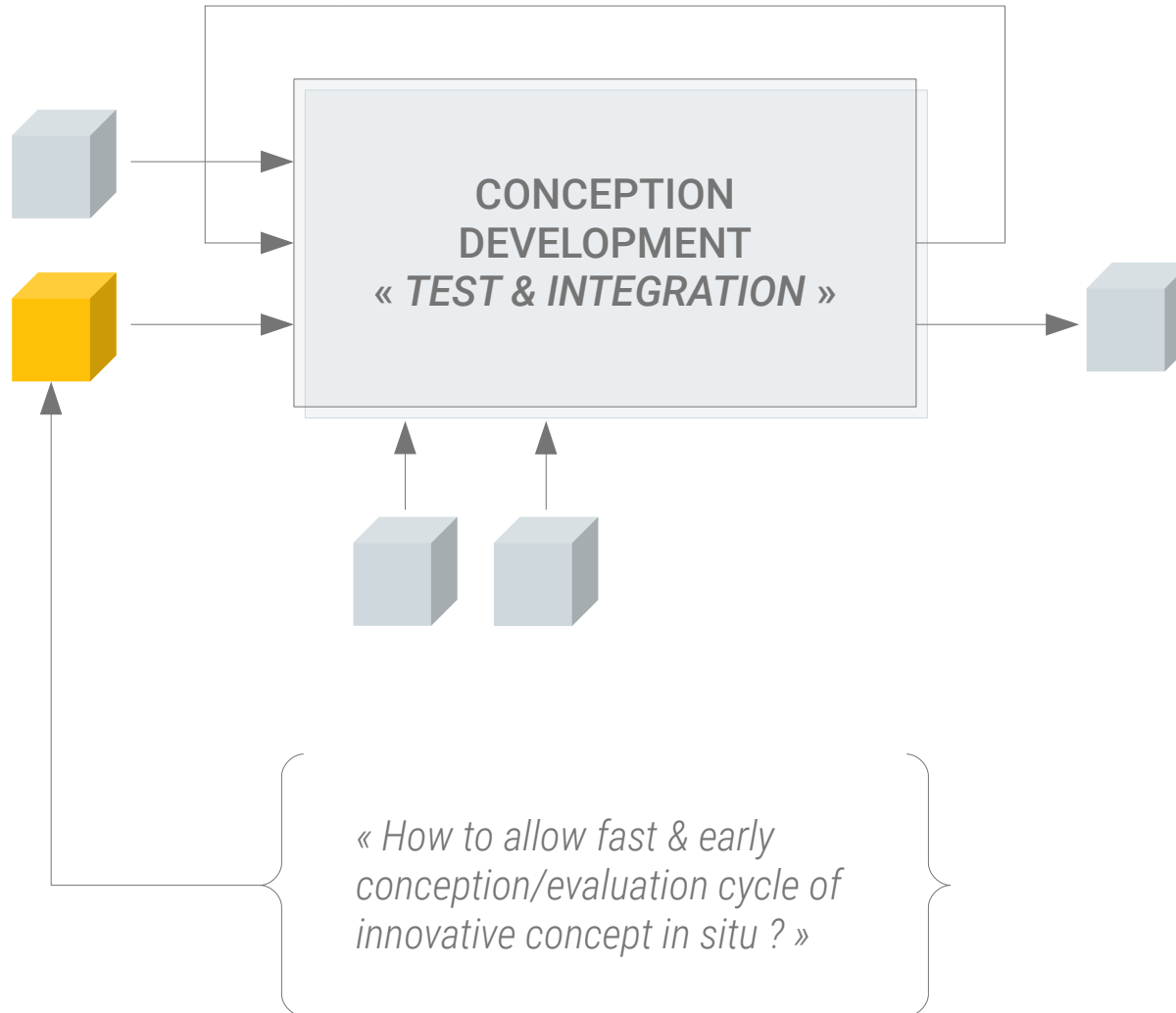
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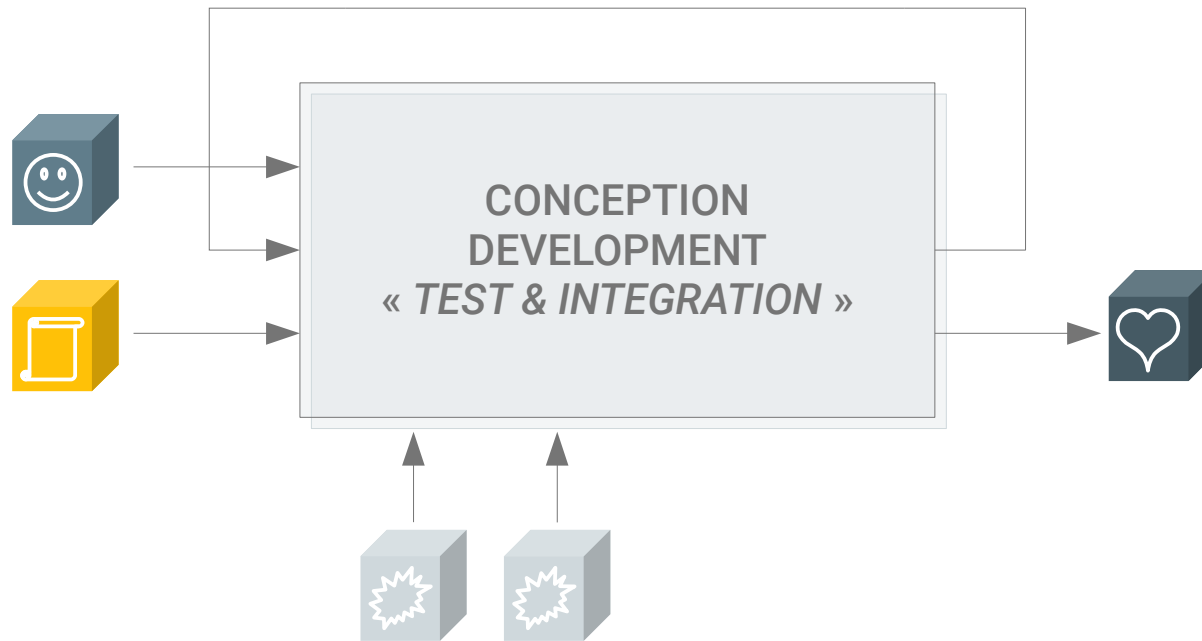
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« How to allow fast & early conception/evaluation cycle of innovative concept in situ ? »

simulation_software_ecosystem-> Problematic

« How to allow **fast & early conception**/evaluation cycle of innovative concept in situ ? »

Analysis

- rapid system prototyping
- by the way, time is money, so if you want something to be setup quickly it has to be a cheap or relatively affordable solution => *software simulation*

simulation_software_ecosystem-> Problematic

« How to allow **fast & early** conception/**evaluation** cycle of innovative concept in situ ? »

A diagram consisting of a horizontal line with a bracket above it, pointing to the text above. The bracket is centered under the text. Below the horizontal line is a large, light gray rectangular box with a thin black border. The box contains the text 'Analysis' followed by a bulleted list. The box is connected to the horizontal line by a vertical line that branches into two horizontal lines, one on each side of the box.

Analysis

- to evaluate something, we need to be representative/immersive enough
- it also mean that we will probably have to handle wide range of heterogenous data sensor
- and because we are scientist, we will have to provide a data warranty => **consistency**

simulation_software_ecosystem-> Problematic

« How to allow fast & early conception/evaluation **cycle** of innovative concept in situ ? »

Analysis

- reliability & repeatability

« How to allow fast & early conception/evaluation cycle of **innovative concept** in situ ? »



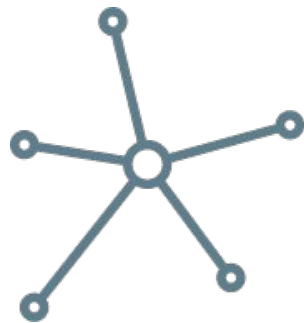
Analysis

- Innovation arises from domain specific experts
- innovation could also emerge from a blend, a fusion of various scientific domain
- we do computer sciences so we should leverage this aspect from users => *focus on key competencies* (reminder: initials conditions)

« How to allow fast & early conception/evaluation cycle of innovative concept *in situ* ? »

Analysis

- human is in the loop => *human centered design*
- human don't lag so we should focus on performance with near real-time requirements
=> *soft real-time ~100Hz*
- human centered + computer science => *Virtual Reality principles !*
- lastly, because we are an in-house ONERA's lab, by human we mean pilot, UAV/ATC operator,...



LABSIM

<http://www.labsim.github.io>