



## Preliminary system tests

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## Executive summary

The purpose of this project deliverable is to report the results of the preliminary tests done at component level. These tests were carried out in an early stage of the development phase and aim at assessing the interface functionality and the preliminary performance of the components developed within the PAN-Robots project.

The evaluation process is based on the deliverable D8.1 “Evaluation and validation plan” [1], which in turn is based on the user requirements and system specification presented in deliverables D3.1 [2] and D4.1 [3].

In total, this document contains the description of nine intermediate tests and discusses the corresponding test results. These tests at preliminary level show that all components exhibit very good intermediate performance and that key technology development is in, ahead of or even far ahead of schedule. While only 50 % of the system performance was expected at this stage of the testing, the systems far exceed the expectations with a 77 % performance on average. None of the tests failed or showed poor performance, as summarized in the following table.

**In total, the preliminary system performance is (far) ahead of schedule**

Test	Interface test	Intermediate performance*	Remark
<b>Data communication</b>	passed	90 %	far ahead of schedule
<b>Time reference</b>	passed	90 %	far ahead of schedule
<b>Omnidirectional stereo sensor</b>	passed	90 %	far ahead of schedule
<b>3D perception system</b>	passed	50 %	on schedule
<b>Autonomous load handling system</b>	passed	70 %	ahead of schedule
<b>Advanced localization system</b>	passed	90 %	far ahead of schedule
<b>Dynamic safety areas</b>	passed	70 %	ahead of schedule
<b>3D mapping</b>	passed	70 %	ahead of schedule
<b>Infrastructure sensors</b>	passed	70 %	ahead of schedule

\* 100 % = ready for integration (far ahead of schedule)

90 % = far exceeding expected intermediate performance (far ahead of schedule)

70 % = exceeding expected intermediate performance (ahead schedule)

50 % = expected intermediate performance (on schedule)

< 50 % = unsatisfactory intermediate performance (behind schedule)

Preliminary tests done in the early stage of development help all project partners to validate the specified interfaces for data exchange and to evaluate the maturity of the technology. The results from the tests also help the project management when evaluating which actions are needed to ensure the successful completion of the project.