

GBU-49 integration on JAS 39 Gripen

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Abstract: This paper presents the integration of GBU-49 on JAS 39 Gripen. All performed tests, from simulator testing to live firing exercises, are described with focus on the used test techniques, tools and processes to maintain and improves flight safety.

The entire integration testing will be presented with special attention to flight safety activities.

- Background and a brief introduction to GBU-49
- Test Overview
 - Simulator test:
 - MYSIM Desktop simulation
 - Flight Safety Checkout
 - Pre-simulations
 - Rig test:
 - Hardware interface checkout
 - Ground Tests:
 - Form/fit trial and Ground crew training
 - Firing sequence checkout
 - System Flight Tests:
 - Flight Safety Assessment
 - Flight Safety Review
 - Software checkout
 - Pilot HMI
 - Live Firing Tests:
 - Rehearsal flight test
 - Data and Video Telemetry
- Evaluation of results
 - Release envelop clearance by mass simulation

With flight safety in mind during all steps of the integration testing the live firing tests was performed successfully.

- By using inexpensive desktop simulators at an early stage the confidence in the integration is built up from the beginning of the project.
- Flight safety assessments and flight safety review board meetings are an efficient way of keeping focus on flight safety during the production of flight test plans.
- By monitoring the live firing in real time via telemetry of data and on board digital video cameras, the test efficiency and safety aspects are kept on a high level.
- By clearing the separation envelop by analysis, only performing a few live separations to confirm the weapon separation model, the number of high risk flight tests are kept to a minimum.