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## Naval Fleet Integrated Logistic Design optimization: the Italian Navy experience in enhancing feedback from the field.

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Defense budget are shrinking and human resources are becoming more critical, while operational needs of Warships increase and change in the life cycle to face new threats.

To achieve the best balance between operational availability (Ao) and costs all along the life cycle, the sustainability requires a correct initial definition of the support followed by its continuous optimization, guaranteed by constant monitoring and analysis of the data coming back from the field, by a review of the reliability parameters, maintenance plan and spare parts list.

The ITN started a change management initiative from beginning of 2000' through an optimization process by analyzing the return from the field data during the TGS FREMM contract, which has lasted for more than 10 years. This process consist of:

- An initial definition of the support: configuration management, obsolescence monitoring, maintenance plans and definition of stocks, optimized with OPUS10 tools, whose models are created starting from the logistic databases provided by the private industry;
- The evaluation and analysis of return from the field data: measure of the reached availability, KPIs (Key Performance Indicator) evaluation and reliability calculation, trough assessment software tools (Weibull) and recalculation software (Calypso);
- The optimization of support: in terms of operational availability and costs, in compliance with the operational requirements.

After the FREMM experience, Italian Navy is taking over all the activities performed so far by the private companies, for current and future shipbuilding programs (LSS, PPA and LHD).

The authors will go through the process set, tested for FREMM program, will show results after more than 10 years of experience, and will cover all the activities Italian Navy is taking care by itself for new programs, mentioning as well IT investments and available tools.

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