Company Profile

Giant System Design Co., Ltd.
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GSD's Company Profile

Giant System Design Co., Ltd. (**GSD**) is an experienced leader among custom software development specialist in Thailand. Founded since **1992** by a reputed team of Management Information Systems (MIS) and other related fields of expertise, we have a long proven record of successful performances for several clients across industries in both private and governmental sectors.

Various types of services in MIS such as education, information planning, system analysis, system design, Intranet and Internet software development, system maintenance, including documentation in both Thai and English and consultancy are offer in full cycle by skillful personnel.

Over the years, we have managed the solid team of software professionals - *We are experience and competent in:*

- Maintenance Management System
- Integrated Logistics Support (ILS) System
- Budgeting System
- Inventory Control System
- Financial System
- Accounting System
- Purchasing System

We, at Giant System Design Co., Ltd., specialize in maintenance management system. We have a pioneer name in ILS application by having a complete expertise of the ILS system-starting from employing a pool of ILS engineers from different backgrounds. Our GILS (Giant's ILS) software application comply with military standards with extensive functionality, because our development team possess not only a wide range of custom programming skills involving the latest and most effective development technologies, we also possess full understanding of the diversification needs of our ILS clients.

To discuss your requirements further, please feel free to contact us at any time. We would be delighted to offer our best to you.

Contact Information:

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Giant System Design Co., Ltd.

Software Development

Communication among IT system stakeholders is a key success factor in our working culture. Since the beginning of the information system project, we highly concentrate on the Requirements Engineering Process. Every design document was reviewed throughout the project to ensure that we would deliver the right solutions. System users are always welcomed as members of the system analysis and design process, just to ensure that they will get their picture up real in a few software releases. Until the last phase, we still listen to you and willing to change in some design that can be made.

We implement the Agile Software Development Process in every project, an Extreme Programming for quick and limited budget project, a Scrum for the medium one, up to an Agile Unified Process for enterprise level project. This process help our team and your IS team seamlessly working together. Our software developer teams are highly volatile to follow the changing of the system requirements. Our team reviews every documents to ensure that the design integrity was made. Even a small conflict or constraint would be detected and resolved as fast as possible.

You can get a really work software application from a realistic budget within a realized schedule.
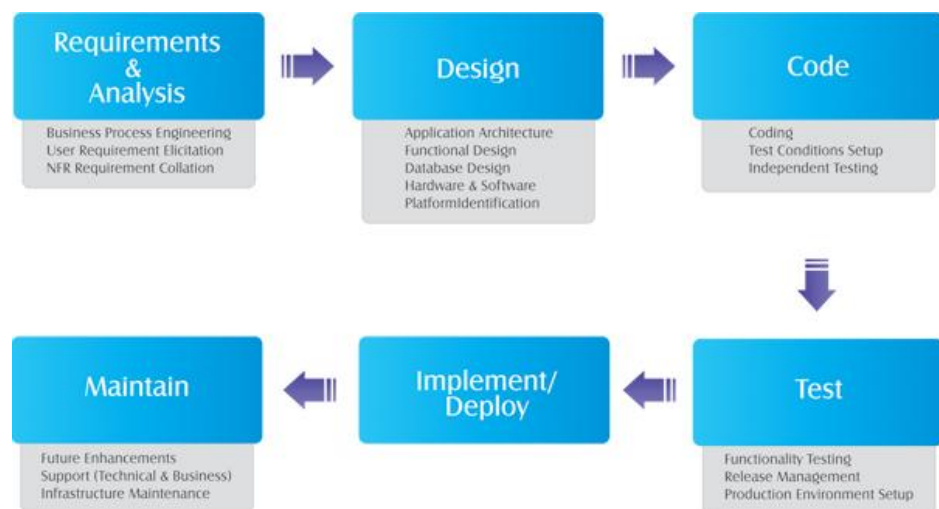
GSD's ILS Customer Profile

Royal Thai Navy

Customer	Project	Year
ASIMAR	**Asian Marine Service (Public) Co.,Ltd.** - ILS Plan for Royal Thai Navy's Patrol Crafts (Gun)	1997
ATLAS	**ATLAS ELEKTRONIK Gmbh (Germany)** - ILS System for Royal Thai Navy's Offshore Patrol Vessel	2002
CSTC	**China Shipbuilding Trading Co., Ltd.** - ILS System for Royal Thai Navy's Offshore Patrol Vessel (OPV 511, 512)	2002
Marsun	**Marsun Co., Ltd.** - ILS System for Royal Thai Navy's 3 Patrol Gun Motors (PGM 991, 992, 993)	2006
	- ILS System for Royal Thai Navy's Naval Special Warfare Group (P51-54)	2008
	- ILS System for Royal Thai Navy's 2 Landing Craft Utilities (LCU 784, 785)	2008
	- ILS System for Royal Thai Navy's 3 Patrol Gun Motors (PGM 994, 995, 996)	2010
	- ILS System for Royal Thai Navy's 1 Patrol Gun Boat (PGB)	2014
ST Marine	**Singapore Technologies Marine (ST Marine)** - ILS System for Royal Thai Navy's Landing Platform Dock (LPD 791)	2009
Bangkok Dock	**Bangkok Dock (1957) Co., Ltd.** - ILS System for Royal Thai Navy's Offshore Patrol Vessel (OPV 551)	2009
	- ILS System for Royal Thai Navy's Tanker	2013

GSD's ILS Customer Profile

Pakistan Navy

Customer	Project	Year
Marsun Co., Ltd. logo	**Marsun Co., Ltd.** - Multipurpose Auxiliary Craft (MPAC) of Pakistan	2006
	China Ship Development and Design Centre (CSDDC) - Fast Attack Craft Missile (FAC(M)) of Pakistan	2011
	Karachi Shipyard & engineering Works (KS&EW) - Small Tanker Utility Ships (STUS) of Pakistan	2012

ILS Training

- ILS Basic Training Course

- Configuration Management Training Course

- Maintenance Planning Training Course

- Supply Support Training Course

- Ship crew Training (Using ILS/Planned Maintenance System)

GSD's Customer Profile

Financial/Inventory System:

Government Sector

- Department of Welfare, Royal Thai Navy (Accounting system)
- Department of Energy Development and Promotion, Ministry of Energy (Budgeting, Inventory Control, Financial and Accounting systems)
- Bureau of Energy Reservation and Conservation, Ministry of Energy (Budgeting, Inventory Control, Financial, Accounting, systems)
- Office of Accelerated Rural Development (Accounting system)

Private Sector

- SDP Intertrade Co., Ltd. (Inventory Control, Invoicing, Purchasing, Accounting systems)
- CNT Co.,Ltd. (Inventory Control, Invoicing, Purchasing, Accounting systems)
- Kanex Ratchada Co., Ltd. (Inventory Control, Invoicing, Purchasing, Accounting systems)
- Thaivivat Canvas Co., Ltd. (Sales, Inventory Control, Payroll systems)
- Concept Accessories Co., Ltd. (Production Ordering, Invoicing, Inventory Control, Payroll systems)
- Bangkok Green Co., Ltd. (Purchase Order System)
- Bangkok Fastener Co., Ltd. (Production Ordering, Invoicing systems)
- St Paul Clinic Co., Ltd.(Medical Inventory Control system)
- TP Drug Co., Ltd. (Pharmacy Stock system)
- Siam Superior Silk Corporation Co., Ltd. (Inventory Control, Invoicing, Purchasing, Accounting, Payroll systems)
- Giant Group Co., Ltd. (Payroll systems)
- Morakot Industries (Public) Co., Ltd. (Sales Information, Purchasing, Accounting systems)
- Thantawan Industry (Public) Co., Ltd. (Proforma Invoice)

**Other System:**

Government Sector:

- Office of the Permanent Secretary for Science, Technology and Environment (Information System Plan)
- Office of the Permanent Secretary, the Prime Minister's Office (Information System Plan)
- Office of Policy and Planning, Ministry of Science and Technology (Personnel System)
- Office of the Narcotics Control Board (Asset Seizing)
- Department of Export Promotion (Exported Products List)
- Department of Foreign Trade (Registration of Exporters)
- Royal Thai Navy (Crematory system)
- Office of Accelerated Rural Development (Crematory system)
- Sattahip Electric Welfare (Computer System Planning)
- Immigration Bureau (Feasibility study on Airlines and Immigration computers connection).
- Office of the National Human Rights Commission of Thailand (Information System Plan)
- Royal Thai Armed Forces Headquarters

Private Sector:

- Ital Thai Marine (Public) Co., Ltd. (Planned Maintenance System for Royal Thai Navy)
- Giant Group Co., Ltd. (Personnel and Payroll system)

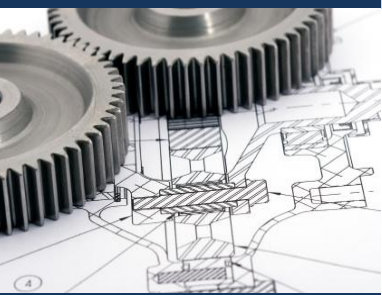# GSD's Contact Information
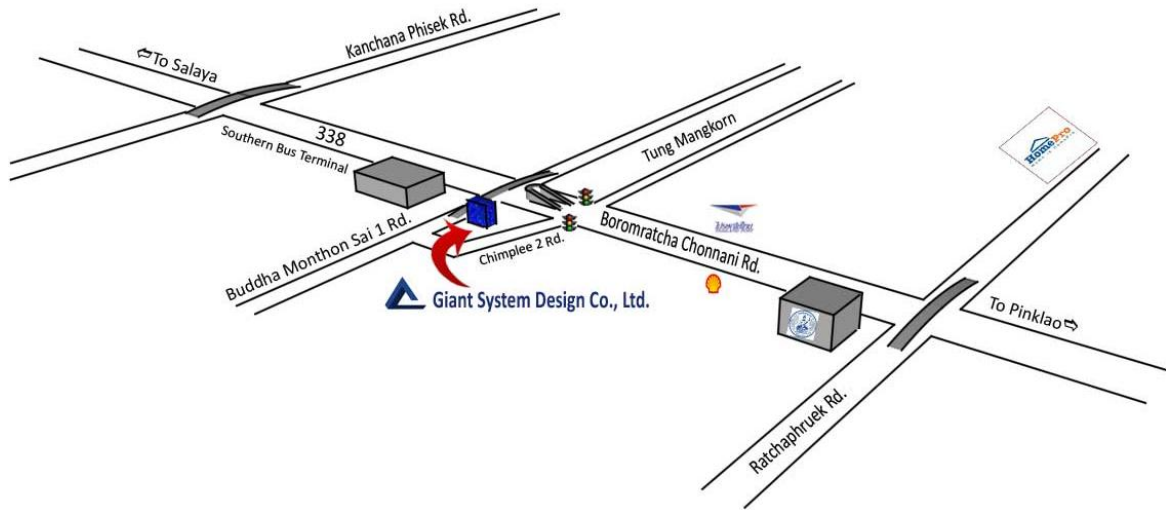
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What is ILS?

By: JAMES V. JONES

Integrated Logistics Support (ILS)

ILS is the disciplined and unified management of the technical logistics disciplines that plan and develop support for military forces. In general, this means that ILS is the management organization that plans and directs the activities of many technical disciplines associated with the identification and development of logistics support requirements for military systems. There are comparable organizations outside the military which provide the same capabilities. In a commercial company this organization may be called product support, customer services, or many other similar names.

Principal Elements of ILS

The ILS organization contains technical disciplines that specifically address the support aspects of maintenance planning; manpower and personnel; supply support: support and test equipment; training and training devices; technical data; packaging, handling, storage, and transportability; facilities; reliability and maintainability; and computer resources support. These areas, as listed below, are commonly referred to as the principal elements of ILS. Each of these elements is the responsibility of an ILS discipline that is staffed with logistics engineers trained in that particular specialty.

Maintenance Planning

Much of the support of military systems is centered around maintenance of equipment. A primary function of ILS is to develop a concept for the maintenance program to support a military system and then to plan the detailed maintenance actions that must occur to support the system. The requirements for maintenance then drive the decisions concerning the resources necessary to support maintenance actions. Logistics engineers are responsible for maintenance planning and analysis through the maintenance engineering process.

Manpower and Personnel

Systems cannot operate and maintain themselves. ILS is charged with the responsibility of identifying the number of military and civilian personnel needed to support operations and maintenance and the skills they require. This is accomplished by maintenance engineers and personnel specialists who participate in the design and analysis process as the system is being developed.

Supply Support

Operation and maintenance actions require material in the form of spare and repair parts. Identification and acquisition of the materials necessary to support the operation and maintenance of military systems is another key responsibility of the ILS organization. The disciplines of provisioning and supply support fulfill this requirement.

Support and Test Equipment

Most military systems require additional items of equipment to support operations or maintenance. Support equipment specialists and test engineers conduct analyses to identify and develop these requirements as a portion of the overall maintenance planning process.

Training and Training Devices

Trained and qualified operators and maintenance personnel are required to support military systems. Within the ILS organization are training specialists who participate in the planning process to identify training requirements and develop appropriate training courses for operation and maintenance personnel. Necessary devices and equipment to support training are also developed by this group.

Technical Documentation

The equipment user needs instructions on how to operate and maintain the system. Technical documentation is prepared by the technical publications discipline that accompanies the system. This documentation describes all the actions required for system operation and maintenance.
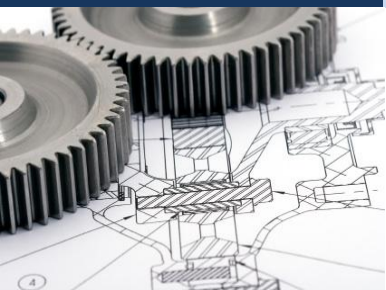
Packaging, Handling, Storage and Transportability

The physical movement of a system must be accomplished in a manner that does not reduce its effectiveness. Logistics engineers plan and implement the procedures and measures necessary for packaging, handling, storage, and transporting military systems.

Facilities

Operation and maintenance of most military systems and training of personnel require some type of facilities. ILS is responsible for identifying the needs for facilities, planning facility utilization, and developing the justification for acquisition.

Reliability and Maintainability

The areas of reliability and maintainability address how long a system will operate without failing and how long it will take to fix and item when it fails, respectively. Sometimes these disciplines are within the scope of the ILS organization and sometimes they are not, depending on a company's organization. In either case, reliability and maintainability play an important role in determining the support that will be needed when a system is used. Logistics engineers use information from the analyses performed by reliability and maintainability engineers to develop system support requirements.

Computer Resources Support (Software and Firmware)

Computers are used to operate and maintain many military systems. The majority of logistics activities have historically dealt with hardware, and most logistics requirements are focused on the maintenance of hardware. The hardware for computers is addressed by the technical disciplines identified above. This leaves software and software embedded on hardware, or firmware. Software is different. Software does not have the physical characteristics of hardware, so it is more difficult to address in the context of failures and maintenance tasks. The resources to support software and firmware are an integral part of the support package for most systems.

Goals of ILS

The goals of the ILS organization are to cause logistics support considerations to influence the design of a system, to identify and develop support requirements that are related to and supportive of the readiness objectives of the system, to acquire the necessary support, and to provide the required support for the minimum cost. The ILS organization is an integral part of the engineering effort that designs military systems. Logistics engineers work hand in hand with other engineers to ensure that support is considered in the design process. Logistics analyses are conducted to identify ways in which the design can be changed to improve support or supportability. Additional analyses are performed to identify the resources that will be required to support the system when it is used. Logistics support resources are the biggest expense associated with a military system over its useful life, so it is imperative that ILS plan for the most economical use possible of these resources.

What is ILS?

By: ir. M.M.R. Kuijer

Introduction

Integrated Logistics Support (ILS) is common use in the naval shipbuilding industry. It comprises the whole life-cycle of the vessel i.e. from the research phase up to the demolition of the vessel. As such it is the concern of the different sectors of the maritime industry:

- Designers

- Producers

- Users

Where these three functions are fulfilled by two or more different companies interface problems are likely to occur.

In this paper ILS will be described from the point of view, of a producer, a shipyard, which has also a design capacity of its own. In that case ILS is the interface between producer and user i.e. between shipyard and Navy.


Why ILS?

ILS is demanded by a Navy; The way ILS is treated and the extent to which ILS is, performed differs from Navy to Navy, The reasons why ILS is demanded, by a Navy are based on the following characteristics of the vessel procured:

- The vessel is complicated. A lot of components and installations are 'one-off's';

A lot of electronics are used, together with a high level of automation.

- The vessel requires a relatively high investment.

- The vessel has a long life-cycle (20-25 years).

- The vessel is of strategic value.

The purpose of ILS is to minimize the life-cycle costs of the vessel with a maximum of system effectivity (fig. 1).
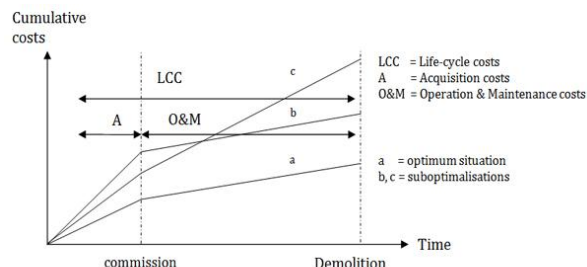
Minimalisation of LCC through the use of ILS

Fig. 1 Minimalisation of LCC through the use of ILS.

Because of the demand for ILS by a Navy, it seems obvious for the selected shipyard to assist the Navy with the ILS related to the naval craft in question.

The aim of this short review is to highlight the fact that a more cost effective ILS seems possible for a Navy by enlargening the scope of supply of a shipyard with the so called initial part of the ILS. To contract both the initial part of the ILS and the vessel to be built to a shipyard will most likely lead to an initial ILS of a higher quality with lower overall costs for the purchasing Navy.

Shipyards which depend on selling naval craft (especially for export but also to their domestic Navy) with in depth knowledge of ILS will be more competitive than those who don't possess this expertise. Thus they stand a better chance to survive in a market suffering from a (sustained) recession. Furthermore the shipyard, as the most likely main contractor, would also be the most obvious supplier of the initial ILS because as a systems integrator responsible for the total system, they are required to have the knowledge of the total product. Interface problems in distributing and combining information are more easily avoided.
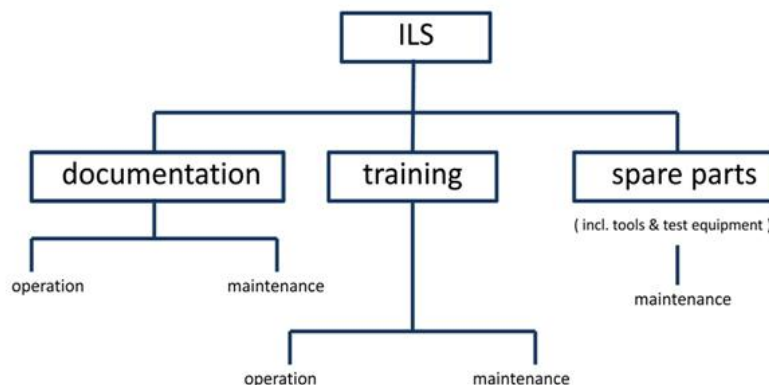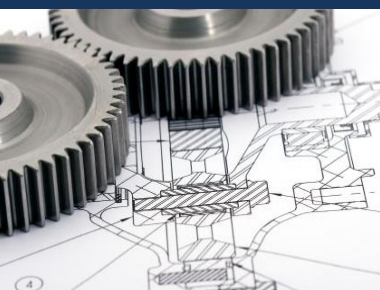
What is ILS?

In general, seen from a producer side, ILS fulfils the same function as product support or service in other areas of industry like the aircraft-industry or the computer-industry. It has to ensure that the product, in this case a ship, can be operated and maintained throughout the utilization phase to the satisfaction of the user.

ILS is characterised by 2 elements:

a. transfer of knowledge, performed by the ILS-elements documentation and training.

b. support, performed by the ILS-element spare parts.

In its outer form ILS is an iterative process. To achieve optimal cost-effectiveness ILS should be integrated in the design process of the vessel, preventing 'penny-wise pound foolish' decisions.

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                        ┌─────────┐
                        │   ILS   │
                        └────┬────┘
          ┌──────────────────┼──────────────────┐
   ┌──────────────┐   ┌──────────────┐   ┌──────────────┐
   │ documentation │   │   training   │   │  spare parts │
   └──────┬───────┘   └──────┬───────┘   └──────────────┘
                                          ( incl. tools & test equipment )
    ┌─────────┐                                   │
 operation  maintenance                      maintenance
                        ┌───────────┐
                    operation   maintenance
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To have the best end-results ILS has to be realized close cooperation between the, Navy, shipyard and its suppliers.

From a practical point of view ILS can be seen as a system to prevent failures. Therefore it can reduce guarantee-claims for the shipyard and enlarge the satisfaction of Navy regarding- its investment. ILS as such has a mutual benefit for both shipyard an Navy concerned.

ILS is based on the following information:

- Operational requirements.

- Maintenance concept.

The Navy is to provide this information which comprises:

- Mission profiles of the vessel: mission duration, operational readiness, usage intensity of the equipment, permitted downtime for maintenance etc.

- Operational area of the vessel, environmental conditions.

- Maintenance philosophy: scope of preventive maintenance, level of repair analysis, maintenance frequencies; maintenance, facilities spare parts, supply support; stock control etc.

The shipyard as a systems integrator has to provide system Information which has to comply with the requirements of the Navy; The suppliers have to provide information related to the equipment they deliver to the shipyard.

Whenever a Navy is notable to specify ILS requirements: in detail, but, nevertheless has a demand for it, the shipyard should be able to propose ILS-requirements to that Navy.

The costs of ILS?

The total ILS can be split into two parts:

- The initial part, to be delivered together with the vessel.

- The after sales part, during the exploitation phase of the vessel.

Normally the initial part of the ILS is together with the vessel itself, contracted to the shipyard where the vessel will be built, or from third parties.

The initial part of the ILS is necessary to be able to integrate the vessel together with its ILS-elements into the existing system of the Navy organisation. As such it is also in the interest of the shipyard that this integration will take place to the full satisfaction of the Navy. The initial part of the ILS can be influenced (reducing costs) by the shipyard. The costs of the after sales part of the ILS depend strongly on the Navy organisation and operational profiles of the vessel and are therefore the responsibility of the Navy itself.

Roughly spoken the costs of the procurement of the initial ILS constitute about 10% of the ship's procurement costs.

This indication has to be handled with care because it depends on the scope of supply within the ILS i.e. the depth of the ILS. In general, the scope of supply of the ILS is divided into 3 levels (defined in the maintenance concept):

1. Organisational Level; this comprises the ILS to the on-board level and deals with operation and on-board maintenance, carried out by the crew of the vessel.

The ILS comprises:

- Documentation for operation and on-board maintenance (system and equipment).

- Training for operation and on-board maintenance (system and equipment).

- Spare parts, tools and test equipment to carry out the on-board maintenance.

2. Intermediate Level; this comprises the ILS to the base level and deals with base maintenance of the ship; carried out by base maintainers. It comprises documentation, training, spare parts, tools and test equipment to be able to carry out the base maintenance.

3. Depot Level; this comprises the ILS to depot level and deals with depot maintenance of the ship (i.e. major overhaul of the ship or repair of equipment at the manufacturer's plant).
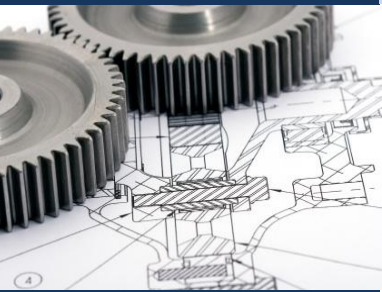
The after sales' part of: the ILS is normally the responsibility of the Navy. Costs.-are spread out over the exploitation phase and can go up to several times the amount of the initial Investment in the vessel. One of the main advantages of ILS is minimalisation of these costs.

Conclusion

From the shipyard point of view ILS is often considered as a downstream activity; as a necessary evil. However, for the user (e.g. Navy) ILS is essential, namely the tool to operate and maintain its investments as cost effectively as possible.

The need for ILS will only increase because of increase in complexity of the hardware and therefore in procurement costs of a naval vessel on the one hand, and the need for Navies to spend the available budgets more effectively on the other. Total systems' operational envelope can only be economically controlled by means of a well balanced ILS from the start.

A shipyard with its aim at the future therefore has to assist Navies in reaching these goals. A consequence is an investment in an ILS-organisation with a capability able to meet the ILS-requirements of a Navy.