**IALA WG 1**

**Task 13**

**Produce a Guideline on assessing and auditing the overall performance of VTS Centres with respect to their effectiveness in mitigating risk and as described in Chapter 18 Quality Management in the VTS Manual**

Checklist

1. Scope (VTS Manual 19.8)

Is the scope of activities to be covered under a Quality Management System (QMS) clearly defined at the highest management level.

Does the scope of activities covered under the QMS include the development and administration of standards to:

 Deliver VTS services that contribute to achieving the Authority‟s objectives of improving maritime safety and minimise the risk of ship sourced pollution and environmental damage within region;

If VTS is considered excessive or inappropriate by the Harbour Authority is a Local Port Services (LPS) provided?

*Describe the Local Port Services (LPS):*

*If the Harbour Authority provides VTS, what types of service are offered and are these appropriate to the risk?*

 Provide an ability to respond more quickly in the event of any safety or pollution incident;

**Provide procedures for reporting deficiencies on visiting ships to an appropriate manager including arrangement for deficiencies to be reported to the MCA?**

 Provide VTS capabilities to interact with and respond to developing traffic situations, including assisting with distress situations;

**Deal with preparedness for emergencies?**

 Improve processes and systems, and capitalise on existing and emerging technologies;

 Deliver services that are relevant to current shipping management practice, user expectations, and community perceptions;

 Enhance relationships with allied services, stakeholders and other interested parties;

 Monitor and analyse the strategic environment to identify future directions, resource requirements etc as the role of other agencies, allied services and client groups increasingly impact on the VTS;

 Adopt best practice governance arrangements;

 Provide corporate wide support for the delivery of VTS services in relation to legal, financial, human resources, contractual arrangements, business services, information technology (including records management), quality management, government liaison, public relations and corporate planning; and

 Provide training (both competency and course based) leading to the granting of qualifications for staff.

Have all VTS or Port Information personnel been appropriately trained?

Are the log books for VTS personnel being kept up to date?

Is there a process to ensure that VTS staff are in date for “refresher training”?

Sets standards and levels of qualifications for various employees and contractors?

**The authorisation of VTS staff?**

**Does the Harbour Authority ensure VTS staff are appropriately trained and that their authorisations are re-validated every 5 years?**

Are VTS On-the-Job-Training-Instructors appointed and qualified to V103/4?

1. Policy (VTS Manual 19.9)

Are the objectives of the VTS clearly defined in an Authority Policy Statement that highlights the authority‟s commitment to good governance, best practice operations, risk management and continuous improvement and key strategies to meet these commitments.

**Defines the Safety policy(s)?**

Is the policy for the conduct of the organisation, and the resources allocated, set at the highest management level.

Are clear policy objectives, particularly with regard to quality of performance and delivery, established at board or director level

Is the Aim of the VTS ["*To Deliver a Reliable, Efficient and Cost Effective 'VTS Service' For The Benefit and Safety of all Mariners and other Stakeholders*"] included in the Quality Policy Statement

Does the Health & Safety & Environmental Objectives Policy Statement include objectives for:

To ensure safety at sea;

 Prevention of human injury or loss of life; and

 Avoidance of damage to the environment.

Is the VTS is committed to:

Providing for safe practices in operations both in ships and ashore;

 Providing a safe working environment;

**Is there a system in place to ensure VTS staff are properly rested before duty?**

**Have all routine and non-routine risks associated with marine operations been formally assessed?**

 Establishing safeguards against all identified risks;

 Continuously improving health and safety management skills of employees including preparing for emergencies related both to safety and environmental protection;

 Continuously improving health and safety performance by proven conformity to accepted national and international safety management standards and quality systems, recognising legal requirements are the minimum standard;

 Striving to maintain a positive health and safety culture with the ultimate goal of reducing ill health and accidents to an absolute minimum, eliminating them where possible;

*How does the Harbour Authority formally consult with its employees*?

 Optimising the consumption of non-renewable resources within practical constraints; and

 Investing sufficiently in its assets and resources to meet regulatory obligations in respect of safety and the environment.

How does the QMS ensure:

 Compliance with legislation, mandatory rules and regulations; and

 Applicable codes, guidelines and standards are taken into account.

1. Responsibilties (VTS Manual 19.10)

Are high-level responsibilities for the primary elements of the Quality Management System clearly defined and documented;

**Are the roles and functions of staff clear and formal?**

Defines the organisation and personnel roles?

Have responsibilities been defined in the following areas:

Establish Direction (e.g. Strategic Plan)

Develop and review policy documents

Develop overall objectives, targets and programmes

Business Plan

Identify Risks

Monitor and review performance

Management Review

Assure regulatory compliance

Identify, record and report on customer expectations (e.g. VTS customer compliments/complaints process, service charter)

How does the Harbour Authority consult with its stakeholders?

Policies and procedures:

**States the procedures to implement those safety policy(s)?**

Develop and maintain policies and procedures

**Produces instructions and checklist to comply with the procedures?**

Document Control

Review and Update, as required

**Who wrote the SMS and when was it last updated/amended?**

**Are the employees required to read and sign the SMS?**

Comply with defined procedures

Conduct internal audits and report on outcomes

Identify and record opportunities for improvement

**Generates accident and incident reports?**

General awareness of the Quality Management System

*How does the Harbour Authority formally consult with its employees*?

1. . Planning & Reporting (VTS Manual 19.

*Develops performance measuring methods?*

*Generates plans and assessments against the ports performance (3 yearly)?*

1. 11)

Are the operations and delivery of VTS services reflected in all high level documents such as the:

 Strategic Plan;

**Deal with preparedness for emergencies?**

 Annual Report;

 Risk Management Plan; and

Establish a formal procedure for notification of various publications (MAIB reports etc.)?

Have past events and accidents/MAIB reports been analysed in preparing the risk assessments?

**Have the risk assessments been completed by competent people?**

**Do the risk assessments clearly identify those risks that are not ALARP (as low as reasonably practicable)?**

**Are the risk assessments continuously re-assessed with new hazards and changed risks, properly identified?**

**When were the risk assessments last reviewed?:**

 Business Continuity Planning.

1. Operational Procedures (VTS Manual 19.12)

How is co-operation and trust among users of the service, VTS personnel and allied services met.

How is information publicly disseminated by the VTS Authority?

How do you ensure the reliability of the VTS information,

How do you assure the availability, continuity and quality of the service provided to all stakeholders.

How does the VTS Authority consult with its stakeholders?

Who is responsible for ensuring that everything in the centre, particularly the staff, function at maximum efficiency at all times.

Are the log books for VTS personnel being kept up to date?

Has the Procedures Manual been prepared in line with [this document] and IALA Recommendation V-127 - "*Operational Procedures for VTS*"

**How does port management test that the SMS is working?**

Are any changes made to operational procedures properly documented.

Are temporary changes to procedures auditable and formally cancelled when expired or regularly incorporated into the appropriate parent document.

1. Continuous Improvement (VTS Manual 19.13)

Are responsibilities for identifying Opportunities for Improvement within the scope of the Quality Management System (QMS) clearly defined

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Is the process for reporting and managing Opportunities for Improvement documented

The duty to keep the need for VTS under review?

Is there a systematic approach to planning and taking corrective and/or preventive action.

How are Opportunities for Improvement applied to elements such as:

1.  Continuous business improvement;
2.  Non-conforming product and/or service;
3.  Corrective action;
4.  Preventive action; and
5.  Customer feedback

How is it ensured that when acting on an Opportunity for Improvement results in a change to a process.

 The change is evaluated to ensure that the desired result has been achieved; and

 Resultant changes in relationships between the process and the service characteristics are documented and communicated.

Who is responsible for this activity?

1. Audits (VTS Manual 19.14)

How does the VTS Authorities ensure the ongoing integrity of the QMS:

 Periodic audits;

 Certification by an accredited third party; and/or

 Assessment by a third party; and/or

 Self assessment.

When was the VTS or provision of Port Information last audited and reviewed?

During this audit and review was the effectiveness of the equipment, manning and procedures

evaluated?

Does the quality auditing report include:

non-conformances

and corrective actions,

areas of good practice.

***5.3 Resource Management***

Resources assigned to a process should be considered independently. These resources

may be owned by the entities responsible for the process, may be subcontracted, or may

be identified by some other type of indirect transaction.

Resources available to an VTS Authority for supporting the QMS can include:

o Infrastructure (eg AtoN maintenance management system)

Systems (hardware, software)

Buildings

Logistics eg transport

o Working Environment (Health and safety)

o Financial

o People

Does the Harbour Authority have a stated training policy?

Is there a training programme?

Are training records maintained?

ref. ICAO Safety Management System:

**SAFETY EVALUATION**

Framework for the implementation and maintenance of a safety management system (SMS) by an vessel traffic services provider.

**1. Safety policy and objectives**

1.1 Management commitment and responsibility

1.2 Safety accountabilities

1.3 Appointment of key safety personnel

1.4 Coordination of emergency response planning

1.5 SMS documentation

**2. Safety risk management**

2.1 Hazard identification

2.2 Safety risk assessment and mitigation

**3. Safety assurance**

3.1 Safety performance monitoring and measurement

3.2 The management of change

3.3 Continuous improvement of the SMS

**4. Safety promotion**

4.1 Training and education

4.2 Safety communication

**1. Safety policy and objectives**

1.1 Management commitment and responsibility

The vessel traffic services provider shall define the organization’s safety policy which shall be in accordance with international and national requirements, and which shall be signed by the accountable executive of the organization. The safety policy shall reflect organizational commitments regarding safety; shall include a clear statement about the provision of the necessary resources for the implementation of the safety policy; and shall be communicated, with visible endorsement, throughout the organization. The safety policy shall include the safety reporting procedures; shall clearly indicate which types of operational behaviours are unacceptable; and shall include the conditions under which disciplinary action would not apply. The safety policy shall be periodically reviewed to ensure it remains relevant and appropriate to the organization.

1.2 Safety accountabilities

The vessel traffic services provider shall identify the accountable executive who, irrespective of other functions, shall have ultimate responsibility and accountability, on behalf of the vessel traffic services provider, for the implementation and maintenance of the Safety Management System (SMS). The vessel traffic services provider shall also identify the accountabilities of all members of management, irrespective of other functions, as well as of employees, with respect to the safety performance of the SMS. Safety responsibilities, accountabilities and authorities shall be documented and communicated throughout the organization, and shall include a definition of the levels of management with authority to make decisions regarding safety risk tolerability.

1.3 Appointment of key safety personnel

The vessel traffic services provider shall identify a safety manager to be the responsible individual and focal point for the implementation and maintenance of an effective SMS.

1.4 Coordination of emergency response planning

The vessel traffic services provider shall ensure that an emergency response plan that provides for the orderly and efficient transition from normal to emergency operations and the return to normal operations is properly coordinated with the emergency response plans of those organizations it must interface with during the provision of its services.

1.5 SMS documentation

The vessel traffic services provider shall develop an SMS implementation plan, endorsed by senior management of the organization, that defines the organization’s approach to the management of safety in a manner that meets the organization’s safety objectives. The organization shall develop and maintain SMS documentation describing the safety policy and objectives, the SMS requirements, the SMS processes and procedures, the accountabilities, responsibilities and authorities for processes and procedures, and the SMS outputs. Also as part of the SMS documentation, the vessel traffic services provider shall develop and maintain a safety management system manual (SMSM), to communicate its approach to the management of safety throughout the organization.

**2. Safety risk management**

2.1 Hazard identification

The vessel traffic services provider shall develop and maintain a formal process that ensures that hazards in operations are identified. Hazard identification shall be based on a combination of reactive, proactive and predictive methods of safety data collection.

2.2 Safety risk assessment and mitigation

The vessel traffic services provider shall develop and maintain a formal process that ensures analysis, assessment and control of the safety risks in vessel traffic services operations.

**3. Safety assurance**

3.1 Safety performance monitoring and measurement

The vessel traffic services provider shall develop and maintain the means to verify the safety performance of the organization and to validate the effectiveness of safety risk controls. The safety performance of the organization shall be verified in reference to the safety performance indicators and safety performance targets of the SMS.

3.2 The management of change

The vessel traffic services provider shall develop and maintain a formal process to identify changes within the organization which may affect established processes and services; to describe the arrangements to ensure safety performance before implementing changes; and to eliminate or modify safety risk controls that are no longer needed or effective due to changes in the operational environment.

3.3 Continuous improvement of the SMS

The vessel traffic services provider shall develop and maintain a formal process to identify the causes of substandard performance of the SMS, determine the implications of substandard performance of the SMS in operations, and eliminate or mitigate such causes.

**4. Safety promotion**

4.1 Training and education

The vessel traffic services provider shall develop and maintain a safety training programme that ensures that personnel are trained and competent to perform the SMS duties. The scope of the safety training shall be appropriate to each individual’s involvement in the SMS.

4.2 Safety communication

The vessel traffic services provider shall develop and maintain formal means for safety communication that ensures that all personnel are fully aware of the SMS, conveys safety critical information, and explains why particular safety actions are taken and why safety procedures are introduced or changed.

In any system, it is necessary to define a set of measurable performance outcomes in order to determine whether the system is truly operating in accordance with design expectations, as opposed to simply meeting regulatory requirements. The definition of a set of measurable performance outcomes also allows identifying where action may be required to bring operational performance of the system to the level of design expectations. Thus, measurable performance outcomes permit the actual performance of activities critical to safety to be assessed against existing organizational controls, so that safety risks can be maintained as low as reasonably practicable and necessary corrective action taken.

The concepts involved and their hierarchy are as follows:

a) ***safety*** is the state in which the risk of harm to persons or property damage is reduced to, and maintained at or below, an acceptable level through a continuing process of hazard identification and risk management;

b) ***level of safety*** is the degree of safety of a system. It is an emerging property of the system, which represents the quality of the system, safety-wise. It is expressed through safety indicators;

c) ***safety indicators*** are the parameters that characterize and/or typify the level of safety of a system;

d) ***safety targets*** are the concrete objectives of the level of safety;

e) ***acceptable level of safety*** is the minimum degree of safety that must be assured by a system in actual practice;

f) ***safety indicator value*** is the quantification of a safety indicator; and

g) ***safety target value*** is the quantification of a safety target.

The selection of appropriate safety indicators is key to the development of acceptable level of safety.

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| Typical examples of safety indicators in the maritime system include, among others: | Typical examples of safety targets in the maritime system include, among others: |
| a) fatal ship accidents;  b) serious incidents;  c) fvesselway excursion events;  d) grounding events;  e) development/absence of primary maritime legislation;  f) development/absence of operating regulations; and  g) level of regulatory compliance. | a) reduction in fatal ship accidents;  b) reduction in serious incidents;  c) reduction in fvesselway excursion events;  d) reduction in grounding events; and  e) the number of inspections completed quarterly. |

The availability of safety data to the State is a determinant factor in the decision regarding the detail of representation, as well as the selection of quantitative or qualitative safety indicators.

Once safety indicators have been defined, the next step is to define associated safety targets, which can be considered as objectives of improvement.

Further consideration when evaluating acceptable level of safety must be given to:

a) the level of safety risk that applies;

b) the safety risk tolerance;

c) the cost/benefits of improvements to the maritime system; and

d) public expectations about the maritime system.

It is also essential to understand the difference between two closely interrelated — and therefore sometimes confusing — safety measurement and safety performance measurement.

**Safety measurement** refers to the quantification of the outcomes of selected high-level, high consequence events, such as accident and serious incident rates. Safety measurement can also be applied to reflect the quantification of selected high-level State functions, such as the status of development/implementation of primary maritime safety legislation or the absence thereof, the status of development/implementation of specific operating regulations or the absence thereof, and the level of regulatory compliance within the State. Safety measurement reflects the extent to which the high-level safety objectives of the safety interventions of mitigation strategies have been achieved.

**Safety performance measurement** is a non-stop activity, involving continuous monitoring and measurement, by an organization, of selected operational activities that are necessary to deliver the services the organization was constituted to deliver (provision of VTS).

An example of safety indicator values and safety target values based on **safety** measurement

|  |  |
| --- | --- |
| **Value of safety indicators**   * 1. *[Rate/number]* Fatal maritime accidents per *[number]* operations   2. *[Rate/number]* Fvesselway excursion events per *[number]* operations   3. *[Rate/number]* Grounding events per *[number]* operations   4. *[Number]* inspections to operators completed *[timeframe]* ***...*** | **Value of safety targets**   * 1. *[Reduce / maintain by / maximum]* fatal maritime accidents *per [number]* operations   2. *[Reduce / maintain by / maximum]* fvesselway excursion events per *[number]* operations   3. *[Reduce / maintain by / maximum]* grounding events per *[number]* operations   4. *[Minimum number]* of inspections completed *[timeframe]***…** |

An example of safety indicator values and safety target values based on **safety performance** measurement

|  |  |
| --- | --- |
| **Values of safety indicators** | **Values of safety targets** |
| * 1. *[Number]* level busts per *[number]*  operations   2. *[Number]* Cat B and C runway incursions in 5 international *[State]* vesselports per *[number]* operations   3. *[Number]* TCAS(traffic collision avoidance system)/vesselprox events per  *[number]* operations   4. *[Number]* non-conforming approaches (NCA) at 5 international *[State]* vesselports per *[number]* operations   5. *[Number]* apron Foreign Object Damage (FOD) events at 5 international *[State]* vesselports per *[number]* operations | 1. *[Reduce by/maximum]* number of level busts per *[number]* operations by *[date]* 2. *[Reduce by/maximum]* Cat B and C runway incursions in 5 international *[State]* vesselports by *[date]* 3. *[Reduce by/maximum]* number of TCAS/vesselprox events per *[number]* operations by *[date]* 4. *[Reduce by/maximum]* number of non-conforming approaches (NCA) at 5 international *[State]* vesselports by *[date]* 5. *[Reduce by/maximum]* the number of apron FOD events at 5 international *[State]* vesselports by *[date]* |