***The intention of this paper***

This paper describes a possible competence profile for the VTSO. This profile fits in the structure chosen both in model courses IALA and in documents of IMO. Bloom’s taxonomy of learning domains is the underlying structure for the model courses and also for this paper. It would be my wish that every member of IALA takes the model to his own organisation, discuss it and bring suggestions back to IALA. Maybe it is possible to create a generic model for the VTSO.

***Input paper for VTS***

The aim of this paper is to provide the VTS community with a competence profile of the VTSO. In order to optimize the performance of the VTSO a profile is essential.

It is not possible to recruit, select, train and assess performance in the right manner without the use of a competence profile.

***Theoretical bases of competency models***

Competence based profiles are being used for several decades. It was supposed to replace job-descriptions which expressed the desired qualities in terms of qualities and traits and were task oriented. The reason for this is that the competence based profile is more specific. If I were to take a chair, sit down next to a VTSO and write down what he is doing. I would automatically have a competency profile.

The difference between the task method is that a task analysis provided information on what someone had to do. The competence profile was developed to include how you had to do it.

***Practical use of competencies***

In practice you see the competence model hardly used as it was intended. In order to include both what and how, descriptions of required competencies become quite extensive. Therefore the how is seldom included. Another tendency which leads to a divertion from the use of the model is the desire that companies have to generalize descriptions over several jobs.

***What are competencies?***

Competencies are the summation of the qualities we are born with and the qualities we acquired during our lives. When we are born we have a certain personality, intelligence and skills (the stairs of the temple). During our lifetimes we go to school, gather knowledge, skills and a certain attitude (the pillars of the temple). We combine these qualities to perform in our jobs. So we are competent if we know how to do something, are able to do it and want to do it. This is exactly the reason why we should stick to a competence profile. It includes people’s motivation to perform in their jobs. Since a competence is something someone does, it always starts with a verb.

The temple model by L.G. Biber-Klever, MA is an adaption of the model of R.A. Roe, Phd .

How to set up the model

The methods used to create the model are very similar to a task-analysis. Desk research, observation, systematic interviews (either in groups or individual), questionnaires, and other sources give insight in the required competencies. Important is that the method is more or less structured and documented.

The development of the model

A good competence model is drawn up via standard procedures. Extensive desk-research, interviewing key job-holders in het field of VTS individually or in a group, sending out standardised questionnaires, making observations at the work place provide the required input to set up the model. The aim of the interviews is to seek the competencies not only required today but also in the near future up to 5 years ahead.

After the model had been drawn up all parties are given the oppertunity to comment on the result. Finally the VTS-authorities should give final approvement to the model.

The VTS-competence profile

The five core competencies of the VTSO are:

|  |
| --- |
| Working at the corridor |
| Manage information |
| Create traffic image |
| Make contact |
| Guide traffic |
| Manage incidents |

These core competencies are divided into partial competencies.

|  |
| --- |
| Works at the corridor |
| Explains the influence of international organizations on legislation on the work of the VTSO. |
| Explains the influence of national legislation on the work of the VTSO |
| Identifies the goal and interest of his own organization |
| Identifies the relationship between several parties involved in the nautical sector |
| cooperates |

|  |
| --- |
| Creates traffic image |
| Combines information |
| Projects traffic image into the future |
| Adjusts traffic image |

|  |
| --- |
| Makes contact |
| Operates marifone and VHF equipment |
| Calls ships |

|  |
| --- |
| Guides traffic |
| Manages extraordinary situations |
| Provides information (INS) |
| Provides navigation assistance (NAS) |
| Organizes traffic (TOS) |
| Guides traffic in Coastal Area’s |

|  |
| --- |
| Manages information |
| Monitors his sector |
| Applies the (toelatingsbeleid) |
| Applies manoevering qualities of ships |
| Applies external circumstances to ship manoevres |
| Operates equipment |
| Gathers information |
| Takes over or carries over his shift |

|  |
| --- |
| Manages incidents |
| Values and describes the system of incident management. |
| Follows procedures after an incident |
| Is pro-active in solving problems |
| Evaluates the situation after an incident |
| Guides traffic in Coastal Area’s |

The competencies are then once more divided into learning goals. Our learning goals have five levels.

**Definition of verbs – Level 1**

    

**Level 1**: A basic knowledge of the subject. It is the ability to remember essential points, to memorise data and retrieve it.

    

|  |  |  |
| --- | --- | --- |
| **Verb** | **Definition** | **Example** |
| **Define** | State what it is and what its limits are; state the definition | Define VTS service. |
| **List** | Say one after the other | List the main structure components of a vessel. |
| **Name** | Give name of objects or procedures | Name the key national and international maritime organisations. |
| **Recognise** | To know what it is because you've seen it before | Recognise the information contained in the different parts of the AIP. |
| **State** | Say or write in a formal or definite way | State the meteorological hazards to vessels. |



**3.2 Definition of verbs – Level 2**

**Level 2**: The ability to understand and to discuss the subject matter intelligently in order to represent and act upon certain objects and events.

|  |  |  |
| --- | --- | --- |
| **Verb** | **Definition** | **Example** |
| **Characterise** | To describe the quality of features in something | Characterise the main items of VTS equipment. |
| **Consider** | To think carefully about it | Consider the benefits of Critical Incident Stress Management (CISM). |
| **Demonstrate** | Describe and explain; logically or mathematically proves the truth of a statement | Demonstrate the importance of good communications in VTS. |
| **Describe** | Say what it is like or what happened | Describe the methods by which IMO notifies and implements guidelines. |
| **Differentiate** | Show the differences between things | Differentiate between different types of visibility. |
| **Explain** | Give details about something or describe so that it can be understood | Explain the purpose and function of IMO. |
| **Take account of** | Take into consideration before deciding | Take account of the limitations of equipment and systems. |

**3.3 Definition of verbs – Level 3**



**Level 3**: A thorough knowledge of the subject and the ability to apply it with accuracy. The ability to make use of the repertoire of knowledge to develop plans and activate them.



|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Verb** | **Definition** | | **Example** | | |
| **Act** | Carry out, execute | | Act to reduce stress. | | |
| **Apply** | Use something in a situation or activity | | Apply the methods of establishing identification. | | |
| **Appreciate** | To understand a situation and know what is involved in a problem-solving situation, to state a plan without applying it | | Appreciate the necessary for coordination. (The learner says that the coordination will be done and with whom, he/she does not perform the actual coordination.) | | |
| **Assist** | Help somebody to do a job by doing part of it | | Assist the captain. | | |
| **Calculate** | To discover from information you already have by arithmetic; to think about a possible cause of action in order to form an opinion or decide what to do | | Calculate water levels. | | |
| **Check** | Make sure the information is correct (satisfactory) | | Check availability of information material. | | |
| **Choose** | Select out of number, decide to do one thing rather than another | | Choose appropriate lock sequencing. | | |
| **Collect** | Assemble, accumulate, bring or come together | | Collect examples of different errors types, their causes and consequences in VTS. | | |
| **Decode** | Turn into ordinary writing, decipher | | Decode the content of weather reports and forecasts. | | |
| **Encode** | Put into code or cipher | | Encode and decode sailing plans (including supplementary information). | | |
| **Estimate** | Form an approximate judgement of a number, form an opinion | | Estimate distance and direction between two points. | | |
| **Execute** | Perform action | | Execute corrective actions. | | |
| **Extract** | Copy out, make extracts from, find, deduce | | Extract pertinent data from relevant sources to calculate ETA. | | |
| **Identify** | | Associate oneself inseparably with, establish the identity | | Identify the role of VTS as a service provider and the requirements of the VTS users. | |
| **Inform** | | Inspire, tell | | Inform supervisor of situation. | |
| **Initiate** | | Begin, set going, originate | | Initiate appropriate coordination. |
| **Issue** | | Send forth, publish | | Issue appropriate traffic information. |
| **Maintain** | | Carry on, keep up, refresh | | Maintain a good situational awareness. |
| **Monitor** | | Keep under observation | | Monitor the effect of human information processing factors on decision making. |
| **Obtain** | | Acquire easily, without research | | Obtain information from the relieving controller. |
| **Operate** | | Conduct work on equipment | | Operate the various items of equipment in the simulator. |
| **Perform** | | Carry into effect, go through, execute | | Perform communication effectively. |
| **Relay** | | Arrange in, provide with, replace by ... | | Relay meteorological information from reports. |
| **Respond** | | Make answer, perform answering or corresponding action | | Respond to distress and urgency messages and signals. |
| **Transfer** | | Hand over | | Transfer information to receiving VTSO. |
| **Update** | | Refresh, make up-to-date | | Update the data display to accurately reflect the traffic situation. |
| **Use** | | Employ for a purpose, handle as instrument, put into operation | | Use approved phraseology. |

**3.4 Definition of verbs – Level 4**

Appendix 1 – The use of Action Verbs



**Level 4**: Ability to establish a line of action within a unit of known applications following the correct chronology and the adequate methods to resolve a problem situation. This involves the integration of known applications in a familiar situation.

|  |  |  |
| --- | --- | --- |
| **Verb** | **Definition** | **Example** |
| **Allocate** | Assign, devote | Allocate the lock sequence. |
| **Analyse** | Examine minutely the constitution of | Analyse the information provided by the radar equipment. |
| **Assign** | Allot as a share, make over | Assign berth. |
| **Coordinate** | Bring part into proper relation | Coordinate berth. |
| **Delegate** | Commit authority to somebody | Delegate a task to a VTSO. |
| **Ensure** | Make safe, make certain | Ensure the agreed course of action in carried out. |
| **Integrate** | Combine into a whole, complete by addition of parts | Integrate current conditions into the management of traffic. |
| **Manage** | Handle, wield, conduct | Manage traffic in the VTS area. |
| **Organise** | Give orderly structure to, frame and put into working order | Organise priority of actions. |
| **Predict** | Forecast | Predict positions of vessels in the harbour. |
| **Provide** | Supply, furnish | Provide information on weather conditions. |



**3.5 Definition of verbs – Level 5**

**Level 5**: Ability to analyse new situation in order to elaborate and apply one or other relevant strategy to solve a complex problem. The defining feature is that the situation is qualitatively different to those previously met, requiring judgement and evaluation of options.



|  |  |  |
| --- | --- | --- |
| **Verb** | **Definition** | **Example** |
| **Balance** | Weigh (a question, two arguments, etc., against each other) | Balance traffic demand with the workload. |
| **Evaluate** | Ascertain amount of, find numerical expression for | Evaluate the necessary information to be provided to captains in need of navigational assistance. |
| **Interpret** | To decide on something's meaning or significance when there is a choice | Interpret operational information. |
| **Select** | Pick out as best or most suitable | Select the berth to be used. |

The application of this method has several advantages

1. it is derived from Bloom, which IALA uses in the model courses
2. it provides training developers with a powerful tool which enables them to classify and grade exam questions.