

STANDARDISING TO MITIGATE COSTS AND RISKS

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Abstract: There are advantages to streamlining certain processes and shared deliverables, within submarine telecom installation projects. Following up on a topic I presented at SubOptic2010, this paper delves further into the idea and understanding, benefits and risks of developing standardised formats for certain aspects of project documentation and processes. Specifically, some examples are given with this theme in mind, relating to route survey, cable installation, As-Laid data, Desktop Studies (DTS), and Route Position Lists (RPL's). It is proposed that the implementation of this best practice could lead to reduced costs, improved integration within the cable community, with fellow seabed users, legislators and help the whole industry in our continual effort for improvement.

1 INTRODUCTION

The current culture of project implementation within our industry is driven by the need for reduced risk faster delivery, and it is based on known practices, processes and experience. The introduction of standardisation within certain areas of our projects can help us improve process, while mitigating risk and cost. Uncertainties and ever-changing project environments lead to variations in project processes and ultimately reduce customer value.

The objective is to identify and resolve the issues facing organisation's attempting to deliver global standardisation processes and detail some of the ways in which the process can be smoothly navigated by concentrating on getting the fundamentals right at the outset.

Examples of standard industry documents are shared to highlight advantages and understand the magnitude of what it takes to bring such standards to our industry.

2.0 WHAT & HOW TO STANDARDISE?

Companies within our industry are seeking initiatives to help them manage infrastructure delivery across their projects in certain (and broadening) areas in order to: streamline project execution, reduce delivery time and cost, increase awareness and interpretation and promote usage of critical information -based deliverables. This involves working smarter, learning and building efficiency and continuous improvement into our processes and procedures, while producing quality documentation that is easily transferrable to the next application, expansion, system owner, maintenance provider or industry peer.

The cost and benefit components for a standardisation (process) itself are: performance; expenses for developing and rolling out the standard; and savings that arise from maintaining just one process. It can be said that the affects and project cost savings and risk reductions far outweigh

the aforementioned costs to get to standardisation.

The success factors for reaching standardisation must have the endorsement and approval of senior management, industry players and governance parties. All said, our efforts need to be harmonized and organized. Many companies have set up a central institution to manage business processes and deliverables.

Similarly, a competence center or group in charge of such process management would ideally suit the subsea cable industry project environment and further expand on ICPC efforts and recommendations. The central group could ensure local buy-in, quality assurance, product development, etc. The group members would be the local process owners and periodically, they meet and review the current standards, and new efforts in their respective practices.

2.1 WHY & WHAT BENEFITS?

Standards have several advantages, principally the use of proven processes, deliverables and designs (minimum requirements) to capture and transfer knowledge resulting in an improved project performance.

Key benefits can be expanded to discuss: lower engineering and design costs, accelerated engineering times, and potentially accelerated procurement periods through streamlined and understood data transfer; reduction in labour costs, consistent processes across the global industry and organizations to facilitate knowledge sharing, training, educating; the advantage of repetition in standardized documentation / deliverables; system commonality ; visualization capability through recognized deliverable packages and data sets; and finally, but not limited to, better cost estimates based on

proven standards that have been executed in projects and systems management.

2.2 THE ISSUES AT HAND

The theoretical and intuitive benefits of standardising appear significant at face value and if successfully introduced can be expected to deliver improved margins in an era of increasing costs. However, once you begin to consider the implications of implementing standardisation, as discussed above, you are immediately opposed by a range of diverging opinions. The basic fact is that industry competitors, supply and services chains and local markets are often critically resistant to differing ways of doing business. A difficulty lies in creating the right balance among standardisation, flexibility, and time. Too much standardisation can reduce flexibility in your design deliverable 'product' and take an excessive amount of time. Too little standardisation allows errors and inefficiencies back into the programme – at all levels, design, install, maintenance. It is critical to have a governance framework in place to manage the use of the standards' and a rigorous change management process is also required to allow for continuous improvement as more knowledge is acquired and technologies, etc. advance.

In order to better place ourselves for working globally and cooperatively, it is vital to allow for easier uptake of new ways of delivering projects. Standardisation allows for smooth transitions and for a unified approach to the delivery of submarine cable projects.

2.3 RISKS

There are a number of risks that need to be addressed and monitored when choosing to standardise infrastructure and across

industry. The very nature of making a piece of infrastructure ‘standard’ implies that it cannot be changed. This heightens the need and explanation for a stringent change management process to be implemented to allow for continuous improvement in the standard and as required.

Typical risks that may arise and need resolution, either at commencement or throughout the process include: inadequate governance and stakeholder role; local site conditions, approvals, and acknowledgement of new formats and standards; intellectual property and who owns the standard, particularly as it will be put in use, deciphered by many geographic, political, etc. locations; lack of ownership in the final ‘product’ / standard and related lack of policing, monitoring and remedying.

Another challenge is to discover standards that do not challenge project managers’ need for some flexibility / freedom to run projects their own way. For information interchange to be successfully implemented and assessed in organizations, it is imperative that project and site managers accept and use it. Thus, engagement of the subject matter, being consulted on, developed and practiced by interested industry experts and project managers is critical and amicable, yet challenging

3.0 FIELD EXPERIENCES

When considering the aforementioned risks, and suggestions for implementing standards, understanding the concept of standardisation and the related benefits of this process, we can imagine the ways in which we could standardise to improve our industry. Some lessons can be learned from certain experiences and recommendations of specific

industry/project items, processes and deliverables as shared below.

Desktop Study

Desktop studies currently vary widely in their composition and are occasionally completed for free or at a reduced price by survey company as a ‘lost leader’ in order to secure the more profitable route survey work. Standardisation of the major subjects in a study could go a long way to ensuring the key issues are always addressed at the planning stage in the installation process and that, when required, a structured risk analysis is undertaken. Despite being major sources of risk and expenditure on cable projects permits and burial are often poorly reported in favour of large amounts of historical weather data and broad geological studies. Structured risk analysis, a component seen in many civil engineering feasibility studies, is almost always absent and risks have to be gleaned from general text instead of being clearly identified, quantified and measured.

RPL (ROUTE POSITION LIST)

The prime advantage a of a standardized RPL document is improved multi-user compatibility. Global RPL users encompass many groups, many of whom find this their sole contact with the cable industry. Having a multitude of formats can be daunting for such users and often creates delays and confusion for planning and operational users. The creation of a global format would reduce error and save time for users often spent on conversion and checking data compatibility. The concept of seamless handover to third parties, owners, marine legislative groups etc has benefits we can all recognize. The use of RPL data within digital information systems would also benefit from a standardized format that would enable

systems to be designed for complete compatibility, reduce workload (and errors) during data entry, allow easier maintenance of data, improve quality control of data by use of automated data checks, improve ease of use for spatial queries and simplify cross and multi-platform use i.e. Google Earth, CAD packages and GIS systems. The introduction of meta-data such as the name of the coordinate data source, a figure for accuracy possibly based on GPS error information, age of data and vessel-based lay data could also be included to introduce a quality indicator to the RPL. An RPL template that meets most requirements for many users is provided by ICPC but it is the will of the industry and owners to formally adopt a global format that will make the advantages of standardization a reality.

ICPC is a current source for recommendations (of standards) for RPL, cable, and pipeline crossings. However, the industry needs to look at implementing and enforcing such (or improved) ICPC recommendations as agreed standards. As alluded to here, more details, plans and efforts can be utilized and developed within the great foundation ICPC has provided.

Cable and Pipeline crossings

Crossings involve the participation of a number of parties throughout the life of the assets involved, from planning and installation through to decommissioning and recovery. Agreement is required between asset owners and in the case of pipelines and power cables legal crossing agreements are signed. Aspects of the process that could benefit from standardisation include (1) survey and installation elements could be standardized to improve accuracy of positioning data, for example the minimum number of

passes require to locate the assets during the route survey and a description of methods used to calculate the touch-down point during the lay (2) the format of reporting the details of the crossing (for example crossing angle, armour types, water depth). There are numerous benefits but these examples offer advantages key to making crossing data more easily transferable between parties and would improve the quality of data held by all parties.

Caribbean fiber-optic cable installation – A recent installation was recently affected by the incomplete and incorrect data for existing cables, this led to permitting and survey delays and introduced unnecessary risk into the project. The RPL for the existing cables, despite being laid within the last 15 years was of an unusual format and was basic to say the least. The coordinate format was unclear, A/C, water depth and armour type data were missing and there was no date on the document. The positioning data proved to be partially incorrect and a resurvey had to be carried out. The owner of the cable was unaware that their data was incorrect and incomplete but quickly understood the risks this represented when a new cable was to be ploughed in close proximity and laid across their asset. The existence of a standardized document would have made the owner aware of what information he should expect from the installer and given the installer a template for the key data to be handed over after the job.

Furthermore, as we expand our projects into oil & gas industry developments, our discussion of standards reaches another level of importance and commitment. Breaking new ground in different industry installations and methodologies allows us opportunity to create the new standards at the outset of development. The recent experience of International Telecom installing the first deepwater LOFS (Life

of Field Seismic) cable system provided some new challenges in project development. This new 4D seismic technology is currently being planned for installations by various energy companies, and thus, into an industry where quality assurance, HSSE, and standardization are already part of the culture and are strictly implemented. The lessons learned from the planning process, trials, navigation, route planning, ROV operations and scheduling, along with some of the unique engineering carried out provide a new and interesting direction for our submarine cable industry's continual improvement.

4.0 CURRENT EVENTS

Over the past few years there have been significant developments in the subsea cable industry with international governance boards, focus groups dealing with standards, etc. Some of these groups include advisory bodies from other industries (e.g. Oil and Gas UK and IMCA, both of whom were primarily developed to operate within the offshore oil and gas sector), also ICPC specifically geared towards undersea cable protection... and even the United Nations have held sessions on clarifying, improving, and setting rules for undersea cables.

The rules governing the survey, installation, maintenance and repair of submarine cables within territorial waters are defined by the sovereign state governments concerned. Within Exclusive Economic Zones (EEZ) and out into international waters they are covered by the United Nations Convention on the Law of the Sea (UNCLOS).

When looking at the 65th Session of the UN General Assembly, on 29th of March 2010, the Secretary-General addressed the subject of the world's submarine cable networks. Discussions from this UNCLOS

session support the need for standardisation of repair methodology; the need for easier transfer of information between installers / owners / states; and the standardisation of industry practices (for certain activities referenced below).

In the Secretary-General's report he stated: "Submarine cables. A need has been expressed by some States, including in recent workshops, to consider gaps in the existing legal regime regarding submarine cables at the international and national levels, in particular in the implementation of article 113 of the United Nations Convention on the Law of the Sea. Views have been expressed that the current legal regime is not adequate with respect to the operation of, and threats to, submarine cables. In particular, a need for a code of best practices with regard to the laying and repair of submarine cables and the conduct of cable routing surveys was mentioned, among other things. In that context, a need for capacity building activities facilitating the review of the legal regime and possible gaps therein could be considered." [1]

The resolution strongly encourages nations to implement or update national laws to protect cables in fulfilment of national obligations under the UNCLOS. The agreed language states that repairs should be completed in accordance with international law without reference to maritime boundaries.

5.0 CONCLUSION

Standardisation can improve process, performance, schedule, QA, challenges within data sharing lower costs, and give senior management and the industry itself more control and direction. In order to deal with the challenges posed by the need for standardisation and business models need for freedom and individuality, standardisation of our processes and

deliverables should be developed as a group, from all angles, in a task force, with a bottom-up approach... and then mandated from the top level down. Education into a new way of doing installs, reporting and business processes, including documented rules and guidelines are as critical to the process as is the creation of the standards themselves. Standardisation should be seen as a 'living' process and part of the business and evolution of delivering any project throughout our industry. Based on real life examples, new industry and technology requirements and international organizations' requirements, we need to take this paper/discussion to another level and work with groups like ICPC to bring Standardisation to fruition.

6.0 REFERENCES

[1] Submarine Telecoms Forum, Inc; Submarine Cable Industry Report, Issue 1, July 2012, pg. 28