

## PROCUREMENT OF NEW SYSTEMS USING THE “CHERRY-PICKING” METHOD?

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**Abstract:** Open Tender Procurement of “alien” SLTE from a new vendor is now widely used for upgrading already in service submarine cables. The “natural” question is then: “Is it, from a Purchaser’s point of view, interesting and workable, for a new build, to procure through “cherry-picking” the wet plant and the dry plant (SLTE equipment at least)?”

Key technical and commercial issues need to be addressed, with an emphasis on warranty, system robustness, long term support... and overall pro & cons of different solutions during the whole commercial submarine cable ’life.

### 1. INTRODUCTION

During adjudication period for a new submarine cable project, Procurement Group (PG) often conduct a "cherry picking" exercise building their “own” price schedules by using the lowest unit prices found in the potential Suppliers' offers. Final result is a so-called "target price" which is sometimes lower (but sometimes higher...!) that the final system price after negotiations. The main interest of this exercise is to challenge the Suppliers on their prices but is not to buy separately repeaters, cables, marine, PFE, SLTE..(Not forgetting a necessary integrator!)...At the end, all-inclusive turnkey contracts were signed with incumbent submarine Supplier(s). Only quite recently, and mostly for re-use of recovered cables for few projects, Purchasers used a different approach, acting as an integrator [1].

In this paper we will focus on the separate procurement of wet plant and SLTE in the scenario of a new-build.

As an “ultimate dream” would the following picture taken at RFPA, where

each Purchaser own a Fiber Pair and only share the submarine cable (and the PFE) be possible in the real world with limited risk of becoming, in operation, a “nightmare”? SLTEs of different colors on various FP would be from different vendors and could be in different location...

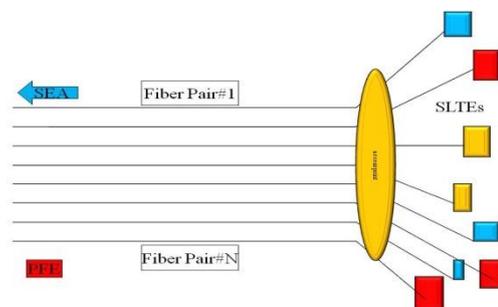


Figure 1. Owners only sharing the cable..

### 2. A bird-eye view of the current upgrade market.

Interest in upgrading DWDM cables with “alien” SLTE is quite old [2] but only around 2006/7, occurred a strong surge of this new upgrade market together with impressive technology progress (10G, 40G and now 100G w1) where companies new to the submarine world have taken a very strong position. Today, one can see on most in service cables, new “alien” SLTEs

connected (often/always in parallel with an original SLTE) to the submarine part previously installed and commissioned by an incumbent submarine supplier.

This new market is important, attractive, but is quite recent and hence, with a limited evaluation window on the long term. It is noteworthy that:

-If no significant technical issues appeared with 10G technology, integrating new 40G (and now/soon a 100G) “alien” SLTE with existing live wet-plan (most of the time designed for 10G technology) appears much less simple for delivering the promised capacity at upgrade’ RFPA and proving sufficient margins for full equipage.

-Owing to the very sharp drop in the upgrade capacity cost under the fierce competition in this new market, it is not evident that the reduced commercial margins will allow, on a medium-long term, a sustainable business case for this highly competitive market.

The next few years will certainly provide us with answers to these important questions and show some consolidation.

That being said, as for now, if it is common to change of SLTE supplier even a few years after RFPA, why not do it by RFPA?

This a natural question driven by the market current situation!

On the Suppliers’ side, only the “new ones”, as SLTE only providers, seem to show clear enthusiasm...

### 3. EVALUATION’ CRITERIA, POTENTIAL ADVANTAGES OF MIXED PROCUREMENT.

On a Purchaser’s point of view, how can we appreciate the pro & cons of such a new procurement scenario? Let us try to review the potential interests & risks

together with the key criteria for this evaluation:

#### 3.1. Evaluation criteria

Such a new procurement scenario needs to be evaluated considering the key requirement of a submarine system during a 25/15 years commercial life:

- Robustness and reliability:

Of course, the implementation of an “alien” SLTE must satisfy the requirement of the Technical Specification and amongst the most important issues to be addressed:

-Does this solution guaranties the transmission margins (BOL & EOL, at initial equipage and full equipage) as per the Technical Specification (TS)?

-Does the technology used allows similar or preferably larger full equipage capacity than with the wet-plant supplier in full turn-key procurement?

-How is implemented (and demonstrated) the compatibility with the **mandatory wet plant monitoring** (and command if applicable)?

-Is the reliability of the equipment (SLTE) compliant with the Tech. Spec. requirements?

-How is this demonstrated before RFPA, in accordance with the Tech. Spec. requirements (technology demonstrations, FAT, integration testing, confidence trial...)?

It appears evident that a detailed integration specification should be agreed by the two suppliers with should show a clear share of responsibility in all case of problem before and after system RFPA. This is far from being simple to achieve (transmission technology is far from simple and commercial interests of vendors totally different)

And of course, it must be verified that this solution is compatible with the

implementation of a different second “alien” SLTE for a subsequent upgrade!

- Warranty and Long Term Support

Keeping the protection of the 5 years warranty period up to Final Acceptance and suppliers’ commitments for Long Term Support (15-25 years) appears not negotiable for the Purchasers. Reaching a clear & workable agreement between two competing suppliers while keeping sound purchasers’ interests will be needed; no doubt it will be a long discussion..

- Easy Operation & Maintenance

The obvious question relates to the Management system: If no SLTE from the wet-plant supplier is installed, the new SLTE vendor should provide this Management System and integrate it with the wet plant monitoring & command and maintenance repairs follow-up, not forgetting the PFE.. And with costs kept acceptable.

Of course, as encountered in present upgrades, even partial equipment with SLTE from the wet-plant vendor would highly facilitate a solution.

### 3.2. Potential advantages & issues

- Cost saving :

Let us take, as a generic example, the cost of an upgrade to be 40M\$ on an existing (quite big) system and say that a price difference of 4 M\$ exists after negotiation. This 10% difference is of course very significant and, providing there is no identified technical risk with the cheapest solution, may drive Purchasers’ decision. But now, let us consider the adjudication of a brand new system of 500M\$(the same as above).

According to a typical cost breakdown depicted in Figure 2, Terminal Station Equipment weight for ~15% and inside this lot, SLTE(including installation, testing..) weight ~60%.

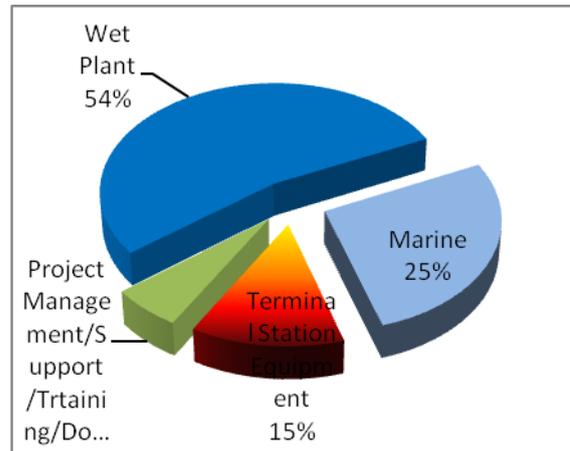


Figure 2 : Typical supply cost breakdown

This leads to the same 40M\$ figure as above for SLTE but a cost difference of 4M\$ is now only less than 1% of the total supply cost.. Which can be much more easily treated during adjudication negotiation.. and this would allow the capex saving while having no “integration” risk.

Then, as it could be expected, cost difference is most probably not the main driver for deciding to “cherry-pick” an “alien” SLTE for a new build.

- Increased maximum capacity, additional functionalities/features/ .. :

There might be some advantages for the Purchasers if a different SLTE could allow, integrated with the chosen supplier(s) for the new build, higher design capacity (with the same margins), and/or smoother, quicker.. and far cheaper upgrade costs.

But, as a minimum:

- Increased promised capacity should be proven before/during construction with the same standards used for a turnkey procurement even with this two (competing) vendors scenario.

-A detailed integration specification should be agreed together with specific Terms & Conditions

-All O&M functionalities, and specifically monitoring AND command of the wet plant should remain without limitation or loss of reliability. This include of course powering of the system.

This would be a difficult and risky task needing a deep implication and at the end, responsibility, for the Purchasers which should have sufficient technical skills in order to limit risk of difficult problems. Clear and not ambiguous responsibility borders between the “wet” and the “dry” vendor are mandatory. Imagine the “hot” discussions between vendors should a transmission/degradation issue happens (or if a BU shows switching problems..).

There may be nevertheless some specific opportunities allowing significant risks mitigation. As an example :

-A point to point link: no issues with wet plant command (BU/R-OADM BU...)

-A multi fiber pairs (FP) project with some dark FP at RFPA (obviously commissioned by the wet plant supplier)

In such a case, advantages of a different SLTE could be more easily tested on the field on the dark FP while full system commissioning at RFPA more easily (? TBC..) achieved and agreed by all parties.

This would the leave still a lot of issues on the desk but would be nevertheless be far easier to handle on the technical and the commercial side.

- Flexibility; Purchasers 'independence', reduced delay in upgrade delivery..

Consortium structure only exist because individual Operators cannot (generally) put hundreds M\$ alone in one system : the ROI would be obviously too long. With the increased competition along with the rising interest of new non-telecom owners or

investors, the interest for more independence increases. The ability, for individual owners, to select, for example for coherence with terrestrial WDM links, a specific vendor for the SLTE and to install their “own” equipment in their own PoP could be a plus. Progressing, even slightly and step by step, towards the “ultimate dream” depicted in paragraph#1 may be attractive even if it is clear that full independence is a myth.

Another potential interest could be found if an “alien” SLTE procurement would clearly allow much quicker upgrade capacity implementation in the future. Planning of upgrades [4] is not an easy task and in some cases, the traffic growth was so high (see Figure 3 below) and “un-forecasted” that the upgraded capacity even arrived late. On this point, it can be noted that on the purchasers’ side, the decision process is very often too heavy and time consuming in consortiums, and the pressure put on suppliers for quick delivery is not the only way of progress...

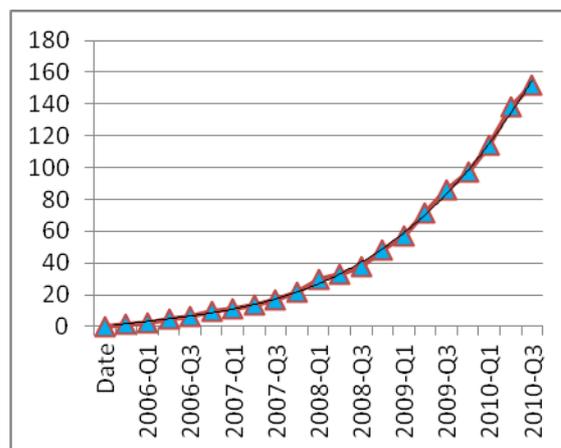


Figure 3. Total Traffic growth example(rate : ~\*2/Year).

#### 4. WORKABILITY.

We tried above to identify, without being of course exhaustive, how and with which key guidelines, mixed procurement for a new build could be attractive.

But, how would it be possible to achieve this goal? Purchasers' high level decision is not sufficient :

-Issuing an ITT with two lots, the wet plant on one hand and the SLTE on the other can be done. But clearly and without ambiguity drafting the necessary integration specifications and specific Terms & Conditions is not simple. And in addition, could the potential purchasers be comfortable if only a few (if any..) wet-plant suppliers agree to bid for a mixed procurement? Adjudicating a submarine new build with reduced competition (Wet plant Suppliers are not so numerous..) could easily cancel any interest for a mixed procurement. clearly, there is a need for purchasers to invent new ways to achieve such a goal.

## 5. CONCLUSION.

We tried to identified, for a new build, possible interests, key issues and criteria for careful risk assessment (going far beyond the monetary issue) for a new mixed procurement.

Future will obviously depend on the consolidation of the current upgrade market.

New and more inventive proposals from the industry (incumbent and new SLTE suppliers) to address the purchasers' needs will also contribute in this area.

As noted many times, this kind of mixed procurement implies much more Purchasers involvement and skills owing to the risk of this new approach. This implies added responsibility as compared with a full turn-key contract.

It is then probable that a step by step approach, starting with specific simple cases, will be necessary should this mixed approach be found really attractive

## 6. REFERENCES

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