

SubOptic
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Enabling Global Communications

Re-Installation of Recovered Submarine Cables; Case Histories of Success

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Presenter Profile

Since joining Tyco Telecommunications in 1999, Chris has worked on numerous cable construction projects worldwide, covering all aspects of the submarine cable installation process. Chris has also recently project managed the recovery, re-configuration and re-lay of an Atlantic cable system. Chris has 32 years experience in the submarine cable industry.

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Re-Installation of Recovered Submarine Cables; Case Histories of Success

Introduction

- Decommissioned Cables
 - Cable Disposition
 - Cable Type & Suitability
 - Cable Condition
- Permitting
- Agreements
- Vessel Availability
- Reliability and Warranty
- New cable Costs and Availability
- Total project Costs
- Case Studies
- Summary

Amount of Available Cables

Region	No. of Cables	Length (kms)	Comments
North Sea	8	2750	All armoured
Mediterranean	1	400	Armoured & unarmoured
Atlantic	9	40,000	Mostly unarmoured
Caribbean	2	4,500	Armoured & unarmoured
Eastern Pacific	4	27,500	Mostly unarmoured
Western Pacific, Far East & Australasia	12	50,000	Mostly unarmoured
Indian Ocean & Arabian Gulf	0	0	N/A
TOTALS	36	125,150	Mostly unarmoured

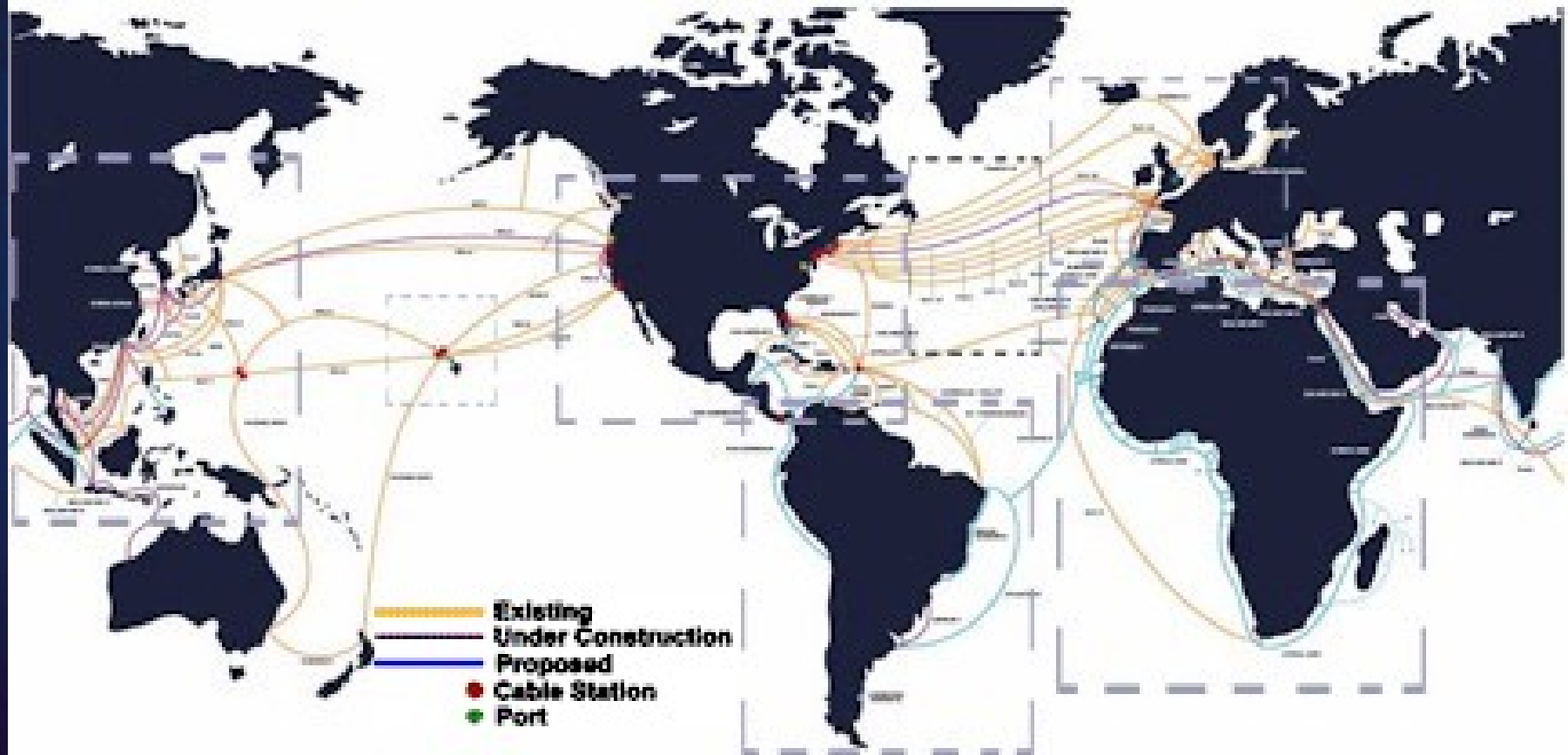
Types of Available Cables

Cable	Region	Commission	De-Commission	In Service	Capacity
TAT-8	Atlantic	1988	2002	14 years	280 Mb/s
NPC	Pacific	1991	2004	13 years	420 Mb/s
BMP	China Sea	1992	2004	12 years	560 Mb/s
PacRim West	Pacific	1995	2005	10 years	560 Mb/s
Gemini North & South	Atlantic	1998/99	2005	7 years	55Gb/s

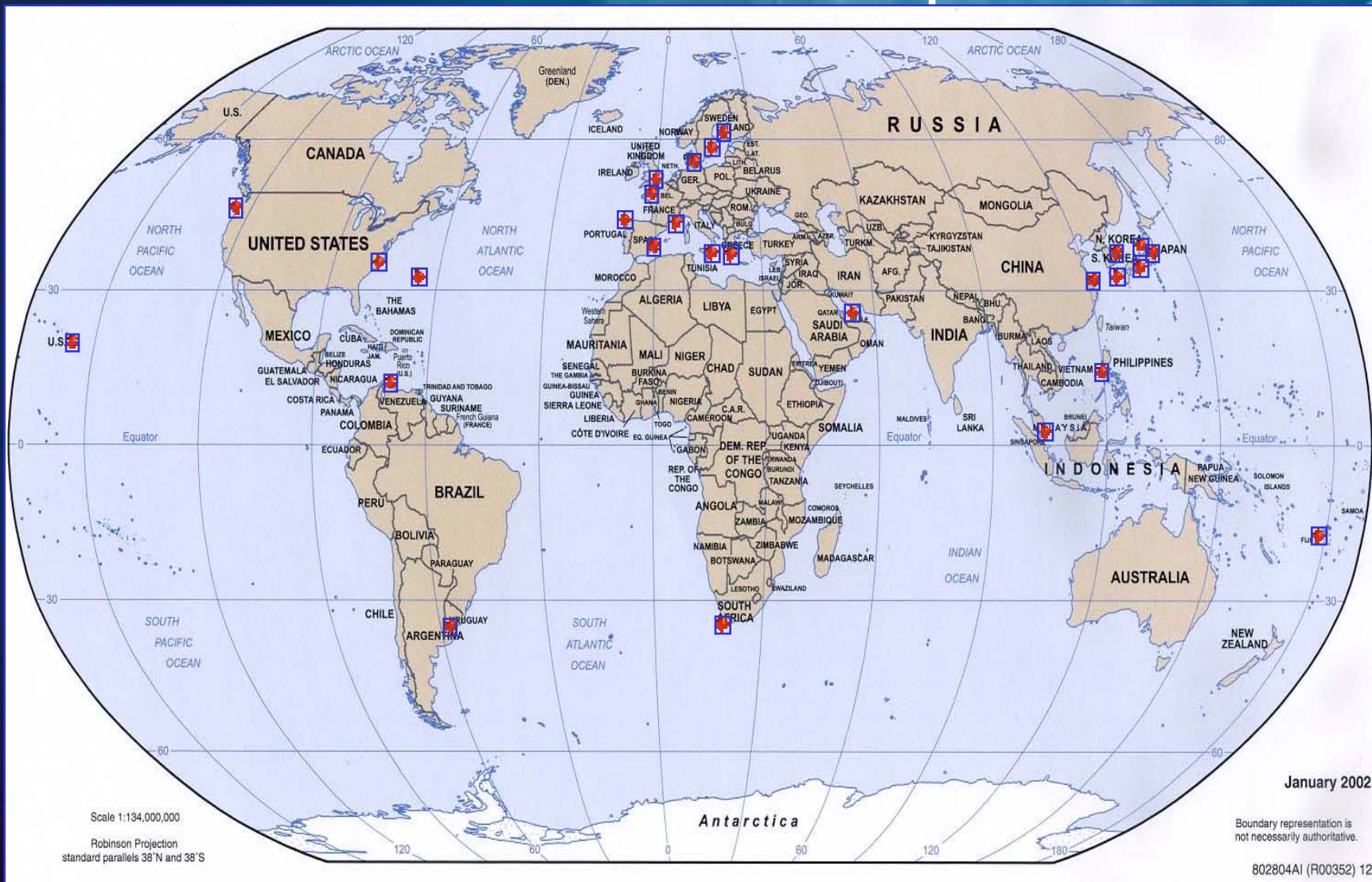
Cableship Availability

Region	Length kms	Suitable Cableships	Maintenance Cableships unavailable	Total C/Ships Available
North Sea	2750	4	2	2
Mediterranean	400	4	2	2
Atlantic	40,000	10	4	6
Caribbean	4,500	2	0	2
Eastern Pacific	27,500	2	1	1
W.Pacific, Far East & Australasia	50,000	11	6	5
Indian Ocean	0	2	1	1
TOTALS	125,150	35	16	19

Location of the World's Submarine Cables



Available Cables



Cables Ship Suitability



- LARGE CABLETANKS
- NUMBER OF CABLETANKS
- CENTRE-CASTLE SPACE
- ACCOMMODATION
- JOINTING AND TESTING

TOTAL AVAILABLE VESSELS:	45
MULTI – PURPOSE VESSELS:	10
REMAINING SUITABLE CABLESHIPS:	35

Reliability and Warranty

System Design

- Reliability Forecasts
- Lifetime performance
- Design Life

Recovered
cables

- Cable condition
- Working life

Maintenance

- Potential repair costs

New Cable – Cost and Availability

9 CABLE FACTORIES,
REPEATERED AND
UNREPEATERED

MANUFACTURING
CAPACITY

NEW CABLE COST

- 2 IN USA
- 4 IN EUROPE
- 3 IN AUSTRALASIA
- REDUCED AND POTENTIALLY FALLING BEHIND DEMAND
- LONGER LEAD TIMES
- SUBMARINE CABLE INDUSTRY RECESSION
- CABLE FACTORY COST REDUCTIONS
- TRADE OFF NEW VS. RE-USE

Different Cost Phases of a Project

Cost Phase	New Build Cable	Re-Used Cable
Desk Top Study	Yes	Yes
Route Survey	Yes	Yes
Cable Manufacture	Yes	No
Cable Recovery	No	Yes
Route Clearance (Burial only)	Yes	Yes
Pre Lay Grap Run (Burial only)	Yes	Yes
Shore End Cables	Yes	Yes – And/or potential re-use of existing shore end cables
Marine Installation	Yes	Yes
Post Lay Works (Burial Only)	Yes	Yes
Project Management	Yes	Yes

Case Study A

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Cable – Atlantic –
2006

- All recovered cable (> 500 Km)
- Recovered cable previously ploughed
- One shore end cable, re-used in-situ
- Re-configuration carried out at sea
- Cables ship readily available
- Recovery costs less than new build
- Risk mitigation successful
- **HIGHLY COST EFFECTIVE**

Case Study B

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cable -
Mediterranean

- Ancilliary costs equivalent
- Costs for new build vs. Re-use also equivalent
- Cost of options equal
- **Warranty considerations outweighed cost differential**

Case Study C

Scientific Cables

18 In Use

- World Wide
- New build
- Re-use
- Shared use with operating submarine communications cables

Scientific Cable -
Atlantic

- Re-use cable
- Configured from stock spare cable
- Minimal recovered cable
- Different cable and fibre types from 4 systems
- Pristine cable condition
- **HIGHLY COST EFFECTIVE**

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Summary

Trade off Parameters

- Geographical locations
- Cable types and suitability
- Cable condition
- Permitting
- Terms and conditions
- Ship availability
- Warranties
- New cable cost
- New cable availability
- Total project cost

Summary

Is new better or re-used cheaper

Project specific decision

Review all parameters