



STAND OUT FROM THE CROWD

Bisham Abbey, 14th May 2002

www.fibreoptic.org.uk

INTRODUCTION

Work Smart



FIA

The Fibreoptic Industry Association

**STAND OUT FROM THE
CROWD**

14th May 2002, Bisham Abbey

Mike Gilmore

The Cabling Partnership



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Secretary: ISO/IEC JTC1 SC25 WG3: Generic Cabling

Member: ISO/IEC JTC1 SC25 Project Team: SOHO



Convenor (1994-2002): CENELEC TC215 WG1: IT Cabling



Chairman: BSI TCT7/-/1: IT Cabling

Chairman: BSI TCT7/-/3: IT Cabling Support Group

Technical and Standards Director, Fibreoptic Industry Association

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The End is Nigh



To be published as
EN 50173-1

EN 50173 Ed.2 (2002)

Information technology
-
Generic cabling systems

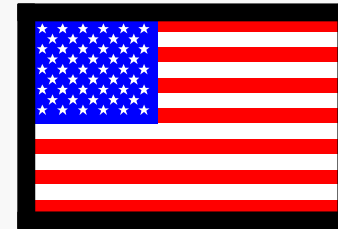
- SE Completed
- 6MP begins July, 2001
- 3MV begins Q2, 2002
- publication Q4, 2002



ISO/IEC 11801 Ed.2 (2002)

Information technology
-
Generic cabling for customer premises

- 2nd CD Completed
- FCD Completed
- FDIS Q2, 2002
- publication Q4, 2002



ANSI/TIA/EIA 568 B Series

Commercial building
telecommunications cabling
standard

- B.1 General Requirements
 - published
- B.2 Balanced Cabling
 - published
 - Addendum 1
 - Category 6
 - Draft 11
- B.3 Optical Fibre Cabling
 - published



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Market Conditions - A Bleak Future

Balanced		Optical Fibre	
Unscreened	Screened	MMF	SMF
Category 5 (1995)		OM1	OS1
Category 5 (2000)		OM2	
Category 5e		OM3	
Category 6			
	Category 7		
Category 6e?	Category 8?		

Established standards

Commoditisation

No high-margin "rabbits"

Balanced		Optical Fibre	
Unscreened	Screened	MMF	SMF
Wireless			OS1
Category 5e			
Category 6			
	Category 7		
		OM3	

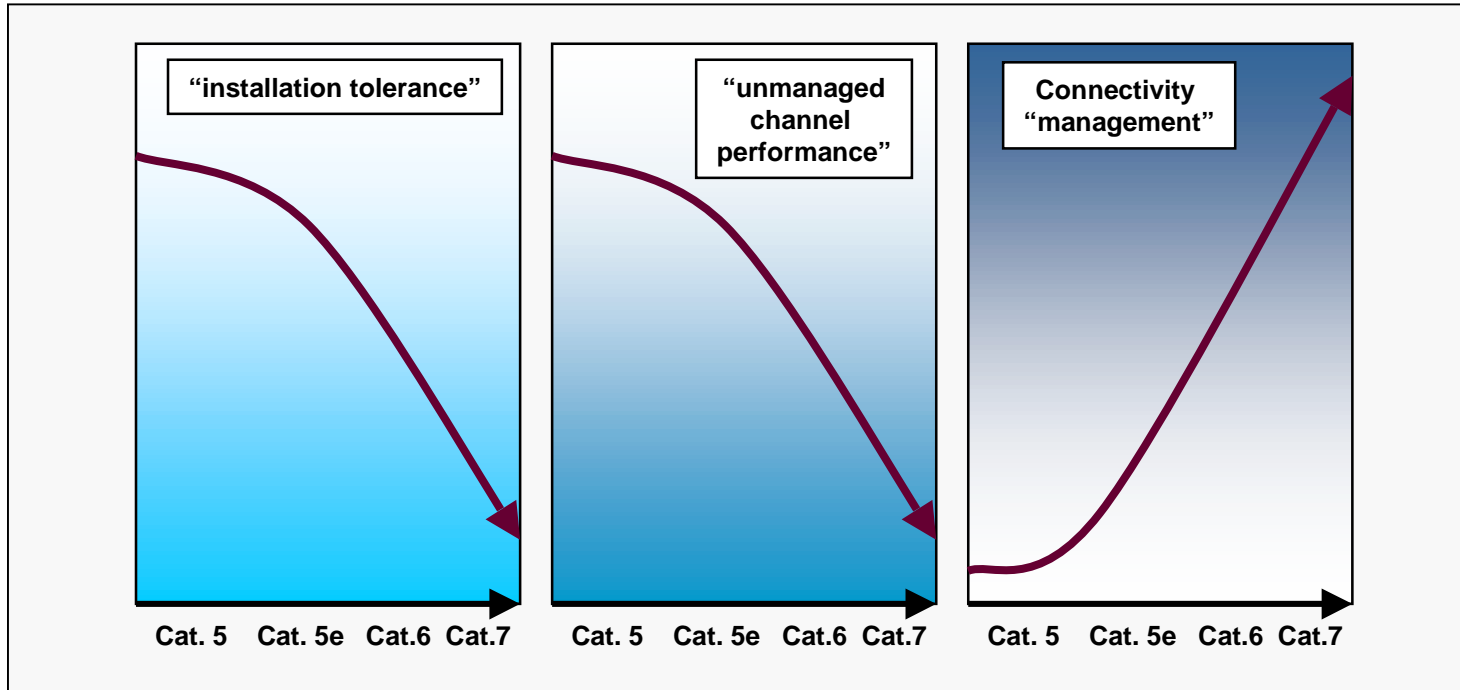
Technology Squeeze
Margin Reduction



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Copper - A Nightmare Scenario?



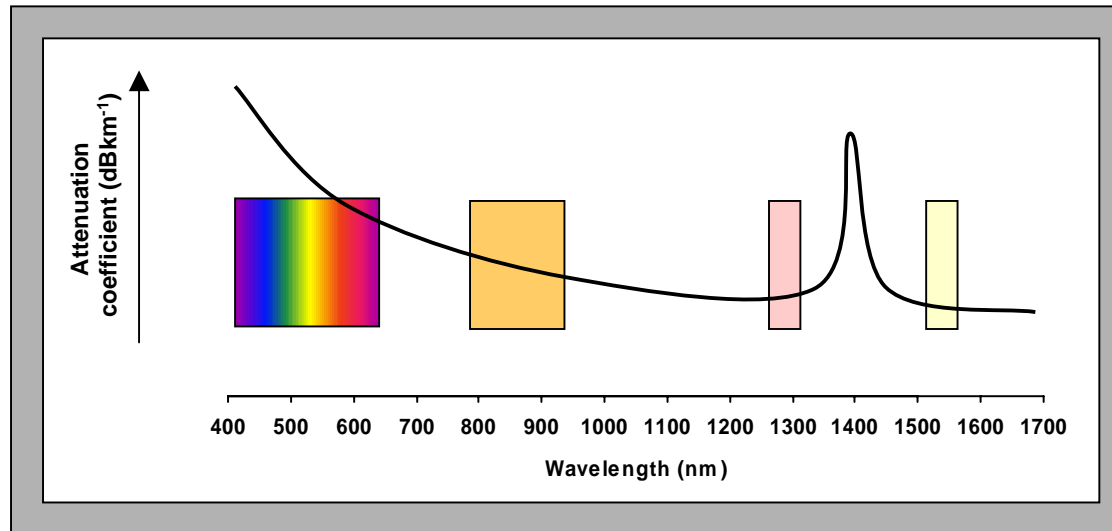
plus the undermining of the reference implementation approach



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1GbE Performance Margin - What Margin?



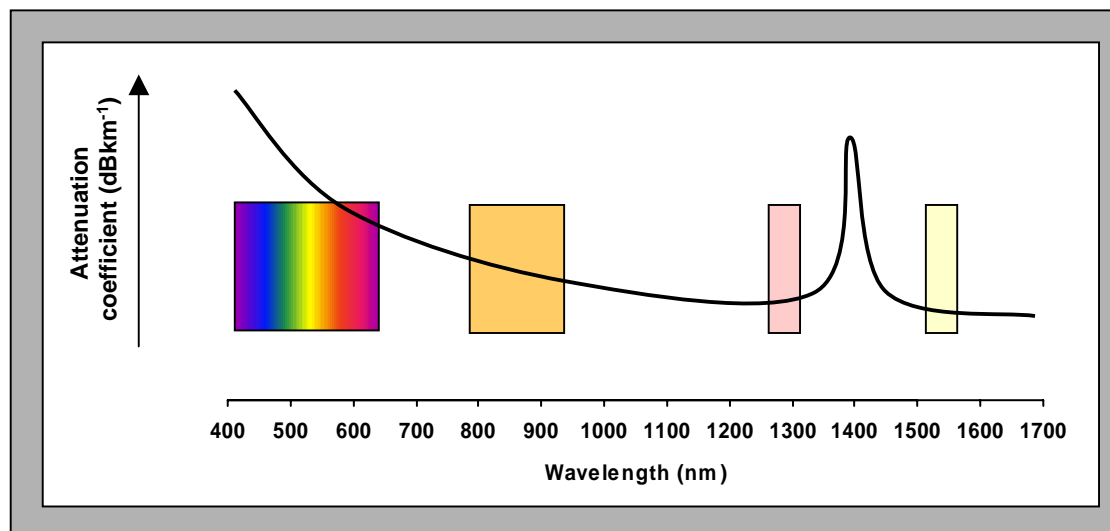
	850nm		1300nm		1310nm
	62.5/125	50/125	62.5/125	50/125	SMF
OFL Modal Bandwidth (MHz.km)	200	500	500	500	
Assumed OF attenuation (dBkm ⁻¹)	3.75	3.50	1.5	1.5	0.5
	1000BASE		-SX		-LX
			830nm	1270nm	
Maximum channel length (m)	275	550	550	550	5000
Max. OF cable attenuation (dB)	1.1	2.06	0.85	0.85	2.57
Connecting hardware allowance (dB)	1.5	1.5	1.5	1.5	2.0
Maximum Channel Insertion Loss (dB)	2.60	3.56	2.35	2.35	4.57



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10GbE Performance Margin - What Margin?



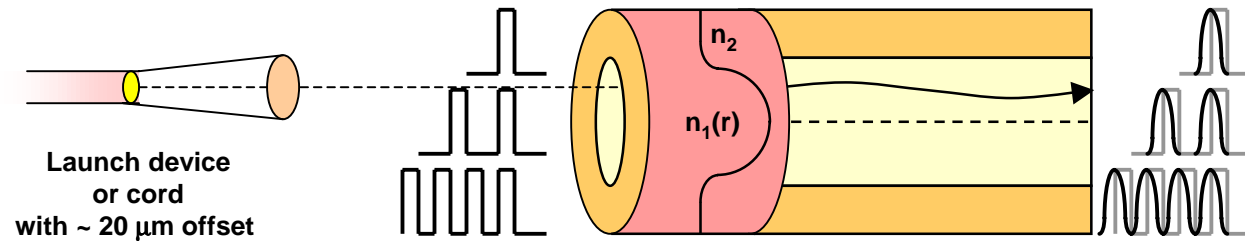
	850nm		1300nm	1310nm		1550nm
	62.5/125	50/125	MMF	SMF		
OFL Modal Bandwidth (MHz.km)	200	500	500			
Assumed OF attenuation (dBkm ⁻¹)	3.50	3.50	1.5	0.4		0.5
10GBASE	-SR/SW		-LX4	-LR/LW	-LX4	-ER/EW
	830nm		1269-1356 nm	1270nm	1269-1356 nm	1550nm
Maximum channel length (m)	33	82	300	10000	10000	40000
Max. OF cable attenuation (dB)	0.12	0.30	0.46	4.20	4.20	
Connecting hardware allowance (dB)	1.5	1.5	1.5	2	2	
Maximum Channel Insertion Loss (dB)	1.62	1.80	2.46	6.20	6.20	10.9



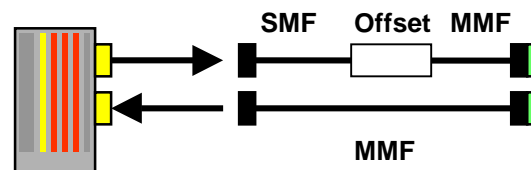
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Application-specific Cordage



1000BASE				
-SX		-LX		
62.5/125	50/125	62.5/125	50/125	SMF
830nm		1270nm		1270nm
Internal to eqmt		Cord required		NA



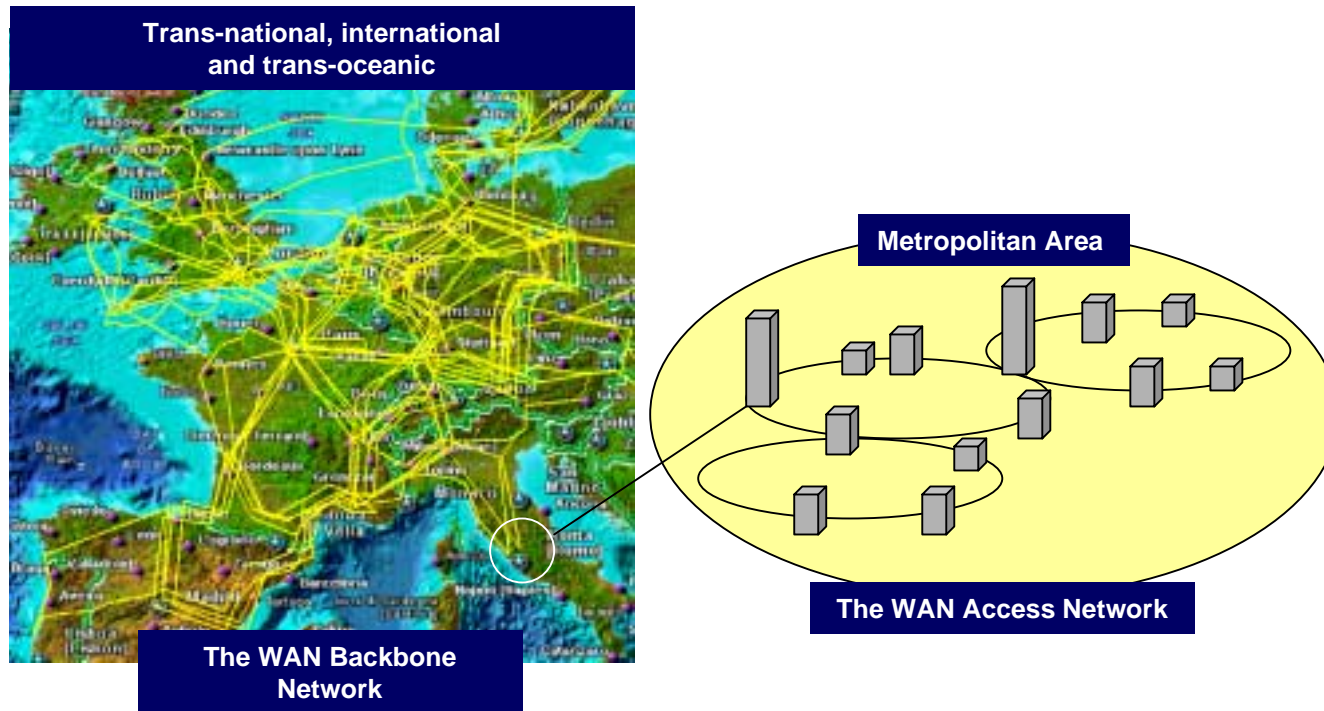
Mode conditioning cord



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WAN Opportunities?



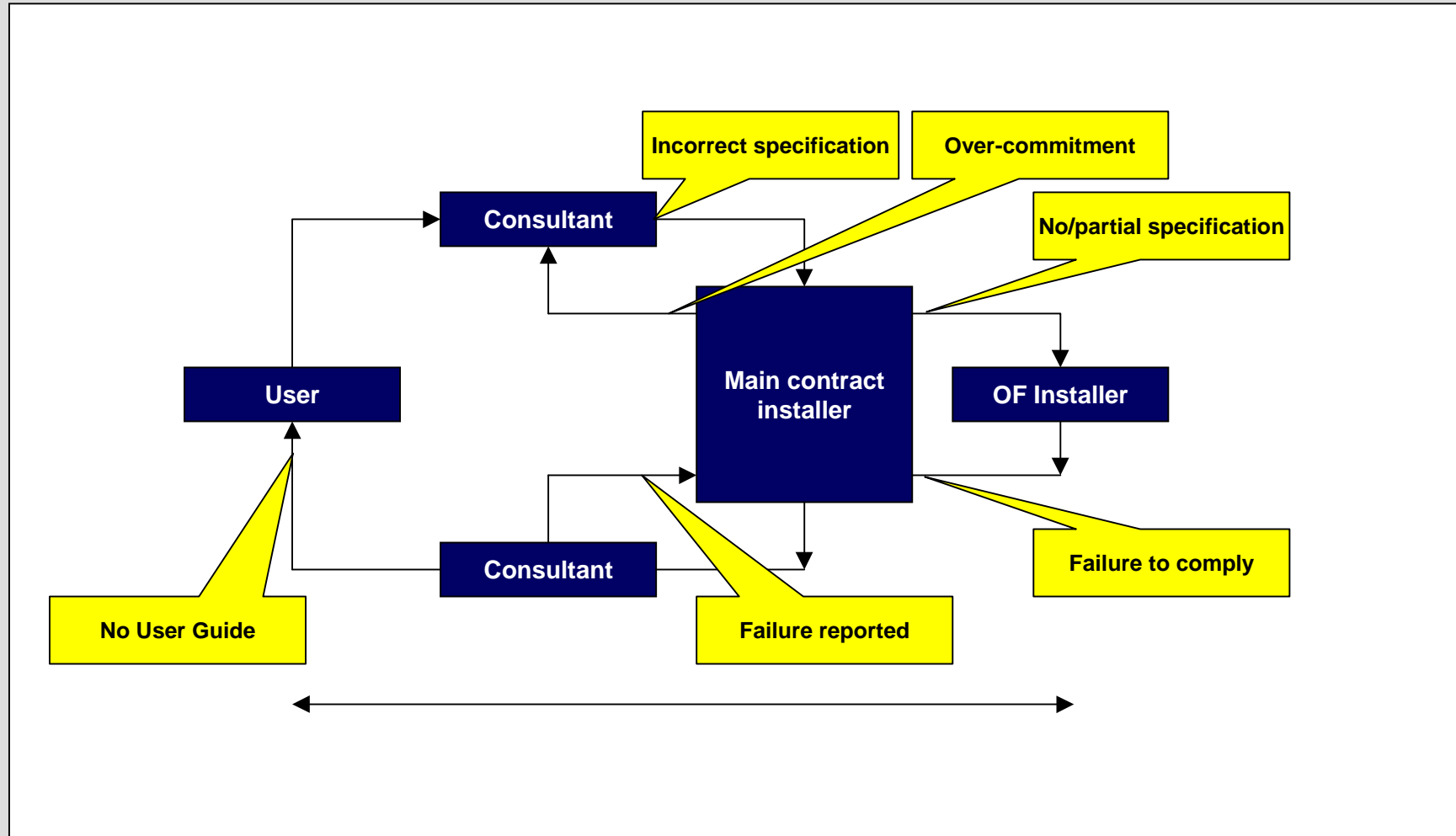
- G.652 - Characteristics of a single-mode optical fibre cable**
- G.653 - Characteristics of a dispersion-shifted single-mode optical fibre cable**
- G.654 - Characteristics of a cut-off shifted single-mode optical fibre cable**
- G.655 - Characteristics of a non-zero dispersion shifted single-mode optical fibre cable**



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The Project Model

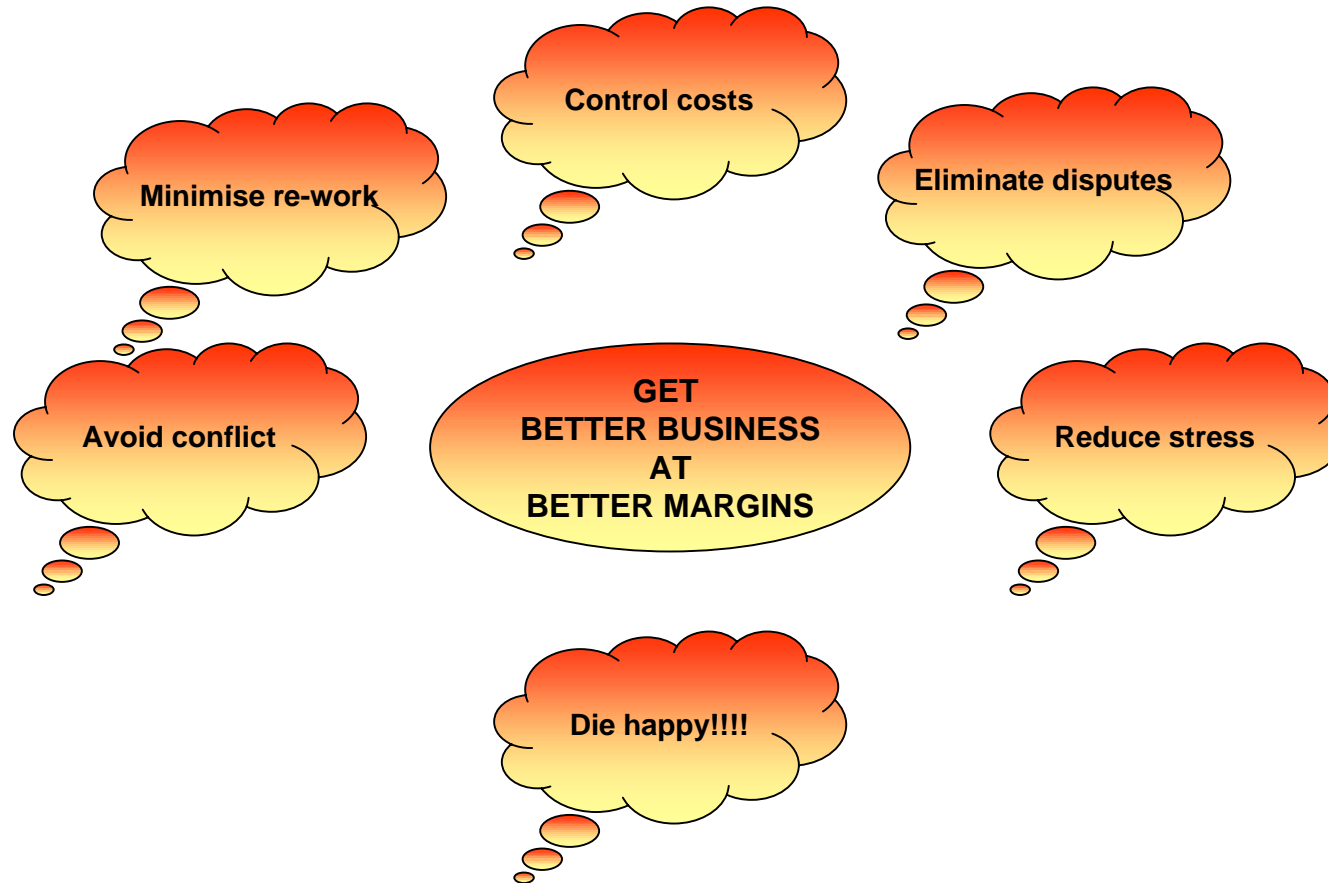




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The Installation Standards

	BS EN 50174-1 (2001)	Information technology - Cabling installation- Part 1: Specification and Quality Assurance
	BS EN 50174-2 (2001)	Information technology - Cabling installation- Part 2: Installation planning and practices inside buildings
	BS 6701	Code of Practice for the installation of apparatus intended for connection to certain telecommunications systems
	BS 7718	Code of Practice for the installation of fibre optic cabling
	IEC 60825-1 A.1 (2001)	Safety of Laser Products Part 1: Equipment classification, requirements and users guide
	IEC 60825-2	Safety of Laser Products Part 2: Safety of optical fibre communication systems



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FIA Technical Support

The FIA Technical Support Documents

- providing interpretation
- delivering guidance
- “fast-track” standardisation



TSD	DESIGN
2000-1-1	OPTICAL FIBRE CABLING: LAN APPLICATION SUPPORT GUIDE
2000-1-3	OPTICAL FIBRE CABLING: DARK FIBRE SUPPORT GUIDE
TSD	OPERATION
2000-3-3	POLARITY MAINTENANCE
TSD	INSTALLATION
2000-4-2-1	TESTING OF INSTALLED CABLING: ATTENUATION USING LSPM EQUIPMENT
2000-4-2-2	TESTING OF INSTALLED CABLING: ATTENUATION USING OTDR EQUIPMENT
TSD	SAFETY
2000-5-1	OPTICAL POWER: SAFETY LEVELS
2000-5-2	OPTICAL FIBRE: HANDLING OF PROCESSING CHEMICALS
2000-5-3	OPTICAL FIBRE: DISPOSAL OF WASTE
MODELLING TOOLS	
CABLING STRUCTURES COST MODEL	



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Smart Spade Work

BE PRO-ACTIVE, NOT REACTIVE

- read the standards
- obtain expert advice
- produce statements of compliance
- develop a specification checklist
- produce accurate method statements for all aspects of the installation process
 - define the in-feed requirement
 - dictate the alternative
- produce the foundations for the generic User Guide

MANAGE YOUR RESOURCE

- identify the true leaders
- identify an office-based project coordinator
- train each person appropriately in your procedures

INVEST IN SOFTWARE

- web-browser production
- pdf creation
- CD production
- test result readers



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Integration

Fibreoptics Anonymous

e-mail link

Installation Browser

User logo

User details

Consultant details

Main Contract Installer details

Quality Assurance

Specifications

User

Checklist

In-house

Quality Plan

Method Statements

Installation

Documentation

Test Methods

Test Result Administration

Component specifications

As-built Documentation

Connectivity spreadsheets

Schematics

User Guide

Channel Manager

Test Results

OTDR

LSPM

OTDR Reader

LSPM Reader



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FIA Initiatives

WorkSmart Programme

