

TABLE OF CONTENTS

1	INTRODUCTION	
1.1	Introduction	1.1
1.2	Civionics.....	1.1
1.2.1	Design of the Civionics System	1.2
1.2.2	Installation of the Civionics System.....	1.2
1.2.3	Maintenance of Civionics.....	1.2
1.3	Data Management	1.2
2	SPECIFICATIONS FOR FIBRE OPTIC SENSORS (FOS)	
2.1	General Specifications for Fibre Optic Sensors	2.1
2.1.1	Scope.....	2.1
2.1.2	Definitions	2.1
2.1.3	General Requirements.....	2.3
2.2	Specifications for Fibre Bragg Grating (FBG) Sensors.....	2.4
2.2.1	Scope.....	2.4
2.2.2	Specifications for Fibre Bragg Sensor	2.4
2.2.3	Specifications for Fibre Accessories	2.4
2.3	Specifications for Fibre Bragg Readout Unit.....	2.5
2.3.1	Scope.....	2.5
2.3.2	Strain Measurement.....	2.5
2.3.3	Optical Specification	2.5
2.3.4	Memory/Logging.....	2.5
2.3.5	User Interface.....	2.5
2.3.6	Communications	2.5
2.3.7	Environmental.....	2.5
2.3.8	Input Power	2.6
2.3.9	Physical Characteristics	2.6
2.3.10	Approvals Required.....	2.6
2.4	Specifications for Long Gauge Fibre Optic Sensors	2.7
2.4.1	Scope.....	2.7
2.4.2	Specifications for Long Gauge Sensor	2.7
2.4.3	Specifications for Long Gauge Rebar Sensor	2.7
2.5	Specifications for Long Gauge Sensor Readout Unit.....	2.8
2.5.1	Scope.....	2.8
2.5.2	Strain Measurement.....	2.8
2.5.3	Optical Specification	2.8
2.5.4	Software User Interface	2.8
2.5.5	Communications	2.8
2.5.6	Environmental.....	2.8
2.5.7	Input Power	2.8
2.5.8	Physical Characteristics	2.8
2.5.9	Specifications for Long Gauge Rebar Sensor Scanner	2.9
2.6	Specifications for Fabry-Perot Fibre Optic Sensors.....	2.10
2.6.1	Scope.....	2.10
2.6.2	Specifications for Fabry-Perot Sensor.....	2.10
2.6.3	Specifications for Embedded Fabry-Perot Sensor	2.10
2.6.4	Specifications for Encapsulated Fabry-Perot Sensor.....	2.10

Table of Contents

2.7	Specifications for Fabry-Perot FOS Readout Unit.....	2.11
2.7.1	Scope.....	2.11
2.7.2	Strain Measurement.....	2.11
2.7.3	Optical Specification.....	2.11
2.7.4	Memory/Logging.....	2.11
2.7.5	Communications.....	2.11
2.7.6	Environmental.....	2.11
2.7.7	Power Consumption.....	2.11
2.7.8	Physical Characteristics.....	2.11
2.7.9	Specifications for a Portable Single Channel Data Logger.....	2.12

3 SPECIFICATIONS FOR SUPPORT EQUIPMENT AND SYSTEMS

3.1	Specifications for Sensor Cables.....	3.1
3.1.1	Scope.....	3.1
3.1.2	Requirements.....	3.1
3.1.3	Pulling.....	3.2
3.2	Specifications for Conduits.....	3.3
3.2.1	Scope.....	3.3
3.2.2	Definitions.....	3.3
3.2.3	Conduit Types.....	3.3
3.2.3.1	Rigid Metallic Conduit.....	3.3
3.2.3.2	Intermediate Metallic Conduit.....	3.3
3.2.3.3	Flexible Metallic Conduit.....	3.3
3.2.3.4	Non-Metallic Conduit.....	3.3
3.2.4	Requirements.....	3.4
3.2.5	Conduit Sizing.....	3.5
3.3	Specifications for Junction Boxes.....	3.6
3.3.1	Scope.....	3.6
3.3.2	Definitions.....	3.6
3.3.3	Materials.....	3.6
3.3.4	Requirements.....	3.6
3.4	Specifications for Cable Termination.....	3.8
3.4.1	Scope.....	3.8
3.4.2	Definitions.....	3.8
3.4.3	Materials.....	3.8
3.4.4	Requirements.....	3.8
3.4.5	Requirements for Non-Control Room Applications.....	3.8
3.5	Specifications for the Control Room.....	3.9
3.5.1	Scope.....	3.9
3.5.2	Location.....	3.9
3.5.3	Dimensions.....	3.9
3.5.4	Requirements.....	3.9

4 SPECIFICATIONS FOR FIBRE OPTIC SENSOR INSTALLATION

4.1	Scope.....	4.1
4.2	General Installation Procedure.....	4.1
4.3	Installation Figures.....	4.3

Table of Contents

5	REFERENCES	
5	References.....	5.1
6	SUMMARY OF INDUSTRY SUPPLIERS OF FIBRE OPTIC SENSORS AND INSTRUMENTS	
6	Industry Suppliers.....	6.1
