
TII492 Intelligent Transport Systems (ITS) - Equipment Supply and Installation Framework - Generation 2 - Lot 4

Volume A: Works Requirements

Part 1: General Specification

June 26

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1. INTRODUCTION AND INTERPRETATION

1.1 Introduction

Volume A describes the Works Requirements including definitions and interpretation.

The Contractor shall, without prejudice to the other provisions of the Contract, be responsible for the execution and completion of the Works in accordance with all the Works Requirements and the Framework Agreement.

The Works Requirements consist of all the following Parts:

1. Volume A - Part 1: General Specification
2. Volume A - Part 2: Works Specification
3. Volume A - Part 3: Technical Specification
4. Volume A - Part 4: Testing & Commissioning
5. Volume A -Part 5: Model Forms
6. Volume C - Pricing Doc
7. Volume D - The FW Agreement

1.2 Interpretation

References in these Works Requirements to Part, section or paragraph herein refers to the relevant Part, section or paragraph in these Works Requirements, unless otherwise stated.

References to appendices refer to appendices incorporated in Part 2: Works Specification.

Terms such as include, including, including but not limited to, in particular, such as, and the like and for example are not to be read as exhaustive, or to limit, but may extend the generality of the provisions to which they relate.

Words and expressions to which meanings are assigned in the Conditions have the same meaning in these Works Requirements unless otherwise expressly provided.

Unless otherwise described in the Framework Agreement, all statements shall refer to the whole of the Works.

All actions required in these Works Requirements and obligations stated in these Works Requirements shall be deemed to be actions and obligations that shall be procured and executed by or shall be the responsibility of the Contractor unless stated otherwise.

With regard to the Contractor's obligations to consult and comply with various organisations or individuals in respect of the Works, the Contractor shall be required to consult and comply only in so far and to the extent as shall be necessary and required to enable the Contractor to meet the requirements of the Framework Agreement including Contract and the Works Requirements.

2. DEFINITIONS / GLOSSARY OF TERMS

2.1 Definitions

Subject to the other provisions of the Contract, the following terms have the following meanings in the Framework Agreement. Terms indicating persons or parties include corporations and other legal entities, except where the context requires otherwise.

- [1] **“Asset and Fault Management System (AFMS)”** means the Employer’s IT System [both the current and any future replacement AFMS procured by the Employer] that is made available to the Contractor for the purposes of asset and fault management.
- [2] **“Asset”** means a physical or intangible resource that has potential or actual value to an organisation.
- [3] **“Asset Record”** means details relating to an Asset.
- [4] **“Authorities”** means all organisations constituted under law excluding those parties identified in the definition of ‘Utilities and Service Providers’ and including the Employer, all relevant county councils, city councils and town councils.
- [5] **“Call-off”** means the process of requesting or ordering equipment, services, or works under the framework agreement or contract.
- [6] **“Cellular Network”** means 4th or 5th generation (i.e. 4G or 5G) cellular communication technology
- [7] **“Commissioning”** means connecting systems and components, final configuration, operational and performance testing and readiness checks as necessary to ensure a smooth transition to an operational system.
- [8] **“Concessionaire Operator”** or **“PPP Operator”** means the private partner operator of the defined section of road and who may be entitled to levy a Lane Occupancy Charge.
- [9] **“Data Protection Laws”** means all Applicable Law relating to data protection including the GDPR, the Data Protection Acts 1988 to 2018, the European Communities (Electronic Communications Networks and Services) (Privacy and Electronic Communications) Regulations 2011, and any regulations or enactments there under and any other EU regulations, directives, decisions, opinions or guidelines on data protection including guidance from the Data Protection Commission and the European Data Protection Board.
- [10] **“Design”** means the design for and forming part of the Works and includes all work necessary for the preparation and completion of the plans, drawings, schedules, specifications and other documents from which the Works shall be executed and completed and shall include the execution of all procedures, checks and provision of all completed certificates and the like required by the Framework Agreement to permit the execution and completion of the Works.
- [11] **“Drawings”** means the drawings referred to in the Specification and any other drawings that may from time to time be provided by the Employer’s Representative or the Contractor.
- [12] **“Employer’s Equipment”** means the Existing ITS Equipment and New ITS Equipment.

- [13] **“End to End Testing”** means software testing methodology to test an application flow from start to end. The purpose of end to end testing is to simulate the real user scenario and validate the system under test and its components for integration and data integrity.
- [14] **“Execute”** or **“Execution”** where used in the Works Requirements means execute and complete or execution and completion in accordance with the requirements of the Framework Agreement, unless the context otherwise shall infer or confer.
- [15] **“Factory Acceptance Tests”** or **“FAT”** means the tests to be performed by the Contractor which are designed to show that part of the Works is ready for release onto the Operational Environment.
- [16] **“Fault”** means an instance of the ITS Deployment Equipment not operating in compliance with the Specification or in the manner for which it was designed.
- [17] **“Interface Agreement”** means an agreement between the Contractor and a Third Party, or an Authority or a Stakeholder or a Utilities and Services Providers that undertakes for both parties to work together collaboratively with each other, defines physical and electrical interfaces where they exist and establishes processes and procedures to be applied for all interactions between both parties for all operational activities.
- [18] **“ITS Equipment Maintenance Contractor”** means Swarco or its successor and is one of the “Employer’s Equipment Maintenance Contractors”.
- [19] **“Local Authorities”** has the meaning given to it in the Local Government Act 2001 and each Local Authority is an Operational Party.
- [20] **“M50 Traffic Flow Optimisation”** and **“MTFO”** means the M50 Traffic Flow Optimisation.
- [21] **“MTFO ITS EDC”** means M50 Traffic Flow Optimisation Equipment Deployment Contract.
- [22] **“Maintenance Contractor”** means the MMaRC Contractor, a PPP Operator responsible for maintenance of specific lengths of the National Road Network.
- [23] **“Minicall”** means same as and will be used interchangeably with “call-off”.
- [24] **“MOCC Operator”** means an Authorised User undertaking Motorway Operation Services planning, monitoring, controlling, informing, coordinating and reviewing roles relating to Incidents, Events, Planned Events on the Road Network by utilising the functionality of the MOCC.
- [25] **“Motorway Maintenance and Renewals Contract (MMaRC)”** means any contract entered into between the Employer and a Motorway Maintenance and Renewals Contract Contractor for the provision of services by it to the Employer in respect of the non PPP- operated sections of the National Road Network.
- [26] **“Motorway Operations Control Centre”** means part of the Employer’s Premises (Dublin Tunnel Building) where MOCC Operators undertake Motorway Operation Services. The MOCC is located in the Dublin Tunnel on the East Wall Road in Dublin 3.
- [27] **“Nominated Liaison Representative”** shall mean representatives nominated by the Contractor and approved by the Employer to be responsible for communications.
- [28] **“Motorway Traffic Control Centre (MTCC)”** is now referred to to as the MOCC. See definition above.

- [29] “**National Road Network**” means the national primary and secondary road network in Ireland and all adjoining roads that will require Motorway Operation Services to be undertaken such as slip roads, approaches and junctions.
- [30] “**NIMS CCTV Management System**” means the Employer’s IT System [both the current and any future replacement CCTV Management System provided by the Employer] which is used to relay the CCTV images collected by the roadside CCTV cameras and displayed to the Operators.
- [31] “**NIMS Journey Time Management System (NIMS JTMS)**” means Journey Time Measurement System, which is part of the Employer’s IT Systems, which is used to calculate journey times across the network.
- [32] “**NRA**” means the National Roads Authority. This is now referred to as TII, see definition below.
- [33] “**Operator**” shall mean the organisation appointed by the Transport Infrastructure Ireland (TII), for the management and operation of the Motorway & Operations Control Centre (MOCC) and associated tunnels on behalf of the Employer.
- [34] “**Private Service Provider**” means any group water supply schemes and other service provider not listed under “Utilities and Service Providers”.
- [35] “**Public Private Partnership (PPP)**” means a public private partnership arrangement as defined in the State Authorities (Public Private Partnership Arrangements) Act 2002.
- [36] “**Road Network**” means the National Road Network and Other Roads and Transport Networks.
- [37] “**Road Operator**” means the organisation appointed by Transport Infrastructure Ireland for the management and/or operation of specific lengths of the Network Roads Network.
- [38] “**SCD**” means the Standard Construction Detail, published by TII as a collective group of documents under the Construction and Commissioning activity within the online TII Publication system (<http://www.tiipublications.ie/>) including all amendments to the standards current 10 working days prior to the tender returns date together with any contract specific revisions and amendments by the Employer as listed in Appendix 0/4 of the Specification.
- [39] “**Site Acceptance Tests (SAT)**” means the tests to be performed by the Contractor which are designed to show that the equipment has been supplied, integrated and interfaced with the Employer’s IT Systems and the Employer’s Equipment in accordance with the Specification.
- [40] “**Stakeholders**” means those organisations which do not have a defined role in the Contract but which have an interest in the Works, including but not limited to, the Operator, PPP Concessionaires, MMarC Contractors, National Transport Authority (NTA), An Garda Síochána, Emergency Services, Local Authorities and School Authorities.
- [41] “**TII**” means the Transport Infrastructure Ireland (the Employer).
- [42] “**Traffic Signs Manual (TSM)**” means the Department of Transport Traffic Signs Manual 2024, including all amendments to the manual, current at the date of the Contract Date and available for download from the Department of Transport website (www.trafficsigns.ie) together with any contract specific revisions and amendments by the Employer as included Volume A Part 2: Works Specification.

[43] “**Utilities and Services Providers**” means the parties listed in Appendix 1/16 Part 2.

2.2 Further definitions and interpretation

In this Framework, unless the context requires otherwise:

- a) words importing the singular number shall include the plural number and vice versa;
- b) words importing a particular gender include all genders;
- c) any reference to a “person” shall be construed as a reference to any individual, partnership, firm, trust, body corporate, government, governmental body, authority, emanation, agency or instrumentality, unincorporated body of persons or associations;
- d) any reference to an Irish legal term for any action, remedy, method of judicial proceeding, legal document, legal status, court, official or any legal concept or thing shall, in respect of any jurisdiction other than Ireland, be deemed to include a reference to what most nearly approximates in that jurisdiction to the Irish legal term;
- e) any words following the terms “including”, “include”, “in particular”, or any similar expression shall be construed as illustrative and shall not limit the sense of the words preceding those terms;
- f) any reference to “day” shall, unless otherwise stated, mean the period of time which begins with one midnight and ends with the next;
- g) all references to time of day shall be a reference to whatever time of day shall be in force in Ireland;
- h) any reference to a public organisation or representative shall be deemed to include a reference to any successor to such public organisation or representative or any organisation or entity or representative which has taken over the functions or responsibilities of such public organisation or representative; and
- i) any reference to the statutory duties or functions of the Employer shall be a reference to such duties or functions (including powers and discretions) from time to time and shall include any common law duties and functions (including powers and discretions).

2.3 Headings and Captions

The section headings and captions to the clauses in this Specification are inserted for convenience of reference only and shall not be considered a part of or affect the construction or interpretation of this Specification.

3. ABBREVIATIONS

Abbreviation	Meaning
4G	Fourth generation of mobile networks
5G	Fifth generation of mobile networks
AADT	Annual Average Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
AAV	Aggregate Abrasion Value
AC	Alternating Current
ADS	Advanced Directional Signage
AFMS	Asset and Fault Management System
AFV	Alternative Fuel Vehicle
AGJ	Above Ground Joints
AGS	An Garda Síochána, Ireland's national police service
AID	Automatic Incident Detection
AIL	Abnormal Indivisible Loads
AISI	American Iron and Steel Institute
ALM	Ambient Light Monitoring
AMD	Amendment to British Standard
AMI	Advanced Matrix Indicators
AMIS	Asset Management Information System
ANPR	Automatic Number Plate Recognition
ASCII	American Standard Code for Information Interchange
ASR	Alkali Silica Reaction
ASTM	American Society for Testing and Materials
ATM	Asynchronous Transfer Mode
ATMS	Advanced Traffic Management System ¹
AVCP	Assessment and Verification of Constancy of Performance
BBA	British Board of Agrément
BGP	Border Gateway Protocol
BRE	Building Research Establishment
BS	British Standard
BSI	British Standards Institute
BTP	Basic Transport Protocol
C2	Drakewell C2 platform
CAM	Cooperative Awareness Message

¹ It is anticipated that the current ATMS will be replaced with NIMS in the coming year.

Abbreviation	Meaning
CAN bus	Controller Area Network bus
CAV	Connected and Autonomous Vehicle
CBC	Cycle By Cycle
CBM	Cement Bound Material
CBR	California Bearing Ratio
CCTV	Closed Circuit Tele-Vision
CE	Conformité Européene, European Conformity marking
CENELEC	European Committee for Electro-technical Standardisation
CEN-DSRC	European Committee for Standardisation-Dedicated Short-Range Communication
CHS	Circular Hollow Section
C-ITS	Cooperative Intelligent Transport System
CJE	Cable Joint Enclosures
CMOS	Complementary Metal-Oxide Semiconductor
COTS	Commercial off the shelf
CP	British Standard Code of Practice
CPOC	European Commission C-ITS Point of Contact
CRU	Commission for the Regulation of Utilities
CSCS	Construction Skills Certification Scheme
CSMA/CD	Carrier Sense Multiple Access with Collision Detection
DC	Direct Current
DDoS	Distributed-Denial-of-Service
DENM	Decentralised Environmental Notification Message
DFS	Driver Feedback Sign
DFT	Dry film thickness
DMRB	Design Manual for Roads and Bridges Standards
DNS	Domain Name System
DoP	Declaration of Performance
DTMF	Dual Tone Multi-Frequency
DWS	Dynamic Warning Signs
ECTLs	European C-ITS Trust Lists
EDC	Equipment Deployment Contract
EIA/TIA	Electronic Industries Alliance / Telecommunications Industry Association
EIS	Electronic Image Stabilisation
EMI	Enhanced Matrix Indicator
eMOS	Employer's enhancing Motorway Operation Services

Abbreviation	Meaning
EN	European Standard
EoC	Ethernet over Copper
EPA	Environmental Protection Agency
ERM	Electromagnetic Radio spectrum Matters
ERT	Emergency Roadside Telephone
ERTO	Egis Road and Tunnel Operator
ETCI	Electro- Technical Council of Ireland
eToll	Electronic Tolling
ETSI	European Telecommunications Standards Institute
EU	European Union
FAT	Factory Acceptance Test
FMEA	Failure Mode and Effects Analysis
FMS	Fault Monitoring System
FPSLS	Fixed Periodic School Limit Sign
FTD	Flat Traffic Delineator
GDPR	General Data Protection Regulation
GGBS	Ground granulated blast furnace slag
GIS	Geographic Information System
GMT	Greenwich Mean Time
GNSS	Global Navigation Satellite System
GPRS	General Packet Radio Service
GPS	Global Positioning System
GSM	Global System for Mobile communications
GSW	Guidance for Specification for Works
GUI	Graphical User Interface
HCV	Heavy Commercial Vehicle
HGV	Heavy Goods Vehicle
HMI	Human Machine Interface
HMSO/TSO	Her Majesty's Stationery Office/The Stationary Office
HSA	Health and Safety Authority
HTML	Hyper Text Markup Language
I2V	Infrastructure-to-vehicle
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronics Engineers
IET	Institution for Engineering and Technology
ILAB	Irish Laboratory Accreditation Board

Abbreviation	Meaning
INAB	Irish National Accreditation Board
IP	Internet Protocol
IS	Irish Standard
ISO	International Organization for Standardization SI Statutory Instrument
ITS	Intelligent Transport System
ITS EMC	ITS Employer's Equipment Maintenance Contract
ITU-T	International Telecommunication Union Telecommunication Standardisation Sector
IVI	Infrastructure to Vehicle
IVIM	Infrastructure to Vehicle Message
JTMS	Journey Time Measurement System
KPI	Key Performance Indicator
LAeq	Ambient Noise level
LCD	Liquid Crystal Display
LCS	Lane Control Signal
LCV	Light Commercial Vehicle
LED	Light Emitting Diode
LGV	Light Goods Vehicle
LiDAR	Light Detection and Ranging
LoS	Line of Sight
LSZH	Low Smoke Zero Halogen compatibility cable
LVD	Loop Vehicle Detectors
M2M	Machine-to machine protocol
MAC	Media Access Control
MAPEM	MAP Extended Message
MC	Moisture content
MCB	Miniature Circuit Breaker
Mcl	Motor cycle
MCV	Moisture Condition Value
MDFT	Minimum dry film thickness (of paint)
MDP	Medium Density Polyethylene
MIB	Management Information Base
MIB	Management Information Base
MMaRC	Motorway Maintenance and Renewals Contract
MOCC	Motorway Operations Control Centre
Mpd	Moped

Abbreviation	Meaning
MPRN	Meter Point Reference Number
MS3	Motorway Signal Mark 3
MS4	Motorway Signal Mark 4
MTBF	Mean Time Between Failures
MTCC	Motorway Traffic Control Centre
MTFO	M50 Traffic Flow Optimisation
MTFO ITS EDC	M50 Traffic Flow Optimisation Intelligent Transport Systems Equipment Deployment Contractor
MVSL	Mandatory Variable Speed Limits
NAA	Non-Availability Amount
NAMAS	National Measurement Accreditation Service
NFF	No Fault Found implies to a failure that was reported to have occurred during a product's operation and/ or use, but upon subsequent use, analysis and/ or other testing, the failure was no longer observable.
NIMS	Network Intelligence & Management System
NOP	Northern Operations Point
NRA	National Roads Authority
NSAI	National Standards Authority of Ireland
NTA	National Transport Authority
NTCIP	National Transport Communications for Intelligent Transport Systems Protocol
NTP	Network Time Protocol
O & M	Operation and Maintenance
OBU	On Board Unit
OCR	Optical Character Recognition
ODF	Optical Distribution Frame
OP	Optical Fibre
OHVD	Over-Height Vehicle Detection
OLTS	Optical Loss Test Set
OMC	Optimum moisture content
ONVIF	Open Network Video Interface Forum
OTDR	Optical Time Domain Reflectometer
PABX	Private Automatic Branch Exchange
PC	Portland Cement
Pcl	Pedal cycle
PDU	Power Distribution Unit
Ped	Pedestrian

Abbreviation	Meaning
PFA	Pulverised-fuel Ash
PKI	Public Key Infrastructure
PLC	Programmable Logic Controller
PNAC	Port-Based Network Access Control
PoE	Power over Ethernet
PP	Point to Point
PPE	Personal Protective Equipment
PPP	Public Private Partnership
PPV	Peak Particle Velocity
PRD	Percentage Refusal Density
PSCS	Project Supervisor Construction Stage
PSDP	Project Supervisor Design Process
PSU	Power Supply Unit
PSV	Polished Stone Value
PSLS	Periodic Speed Limit Signs
PTZ	Pan Tilt Zoom
PVC	Polyvinyl Chloride
PVR	Per Vehicle Record
QoS	Quality of Service
RCD	Road Construction Detail
RDMT	Remote Diagnostic Maintenance Terminal
RFI	Radio Frequency Interference
RHS	Rectangular Hollow Section
RoHS	Restriction of Hazardous Substances Directive
RPII	Radiological Protection Institute of Ireland
RSU	Road-side units
SAT	Site Acceptance Test
SCD	Standard Construction Details
SDH	Synchronous Digital Hierarchy
SFP	Small form-factor pluggable connector
SI	Statutory Instrument
SIM	Subscriber Identification Module
SIP	Session Initiation Protocol
SMC	Saturation Moisture Content
SNMP	Simple Network Management Protocol
SONET	Synchronous Optical Network

Abbreviation	Meaning
SOP	Southern Operations Building
SPaT	Signal Phase and Timing
SPaTEM	Signal Phase and Timing Extended Message
SPW	Specification for Works
SRD	Slip Road Signage sites or Short Range Devices
SREM	Signal Request Extended Message
SRS	Slip Road Signage
STP	Twisted pair PoE cable
SSEM	Signal request Status Extended Message
SWA	Steel Wire Armoured
SWS	School Warning Sign
TCP/IP	The Internet Protocol Suite (commonly known as TCP/IP) is the set of communications protocols used for the Internet and other similar networks. It is named from the Transmission Control Protocol (TCP) and the Internet Protocol (IP)
TE	Traffic Engineering
TEN-T	Trans-European Transport Network
TII	Transport Infrastructure Ireland
TLM	Trust List Manager
TMD	Traffic Monitoring Devices
TSM	Traffic Signs Manual
TMU	Traffic Monitoring Unit
TRL	Transport Research Laboratory
TSCO	Traffic Safety and Control Officer
TTMS	Temporary Traffic Management Schemes
UPS	Uninterruptible Power Supply
UPVC	Unplasticised Polyvinyl Chloride
UTMC	Urban Traffic Management and Control
UTP	Unshielded twisted 4-pair cabling
V2I	Vehicle-to-Infrastructure
V2V	Vehicle-to-Vehicle
VLAN	Virtual Local Area Network
VMS	Variable Message Sign
VMS- P	Variable Message Sign - Pictogram
VMS-T	Variable Message Sign - Text
VoIP	Voice Over IP
VPN	Virtual Private Network

Abbreviation	Meaning
VPR	Vehicle Passage Record
VRN	Vehicle Registration Number
WDM	Wavelength Division Multiplexing
WEEE	Waste Electrical and Electronic Equipment
WIM	Weigh In Motion
WSD	Warning Sign Display
XLPE	Cross-Linked Polyethylene

4. GENERAL REQUIREMENTS

4.1 General Requirements

Subject to the other provisions of the Framework Agreement, Framework Agreement Call-offs and Contract, the execution and completion of the Works (including materials and workmanship) shall comply with, and where the context applies shall be carried out in accordance with, all of the following:

- i. The Works Requirements;
- ii. The TSM;
- iii. The requirements of all relevant Authorities, Utilities and Service Providers and Private Service Providers;
- iv. Any other specific standards and the like referenced elsewhere in the Framework Agreement including the Works Requirements.

Any requirement that a material or article shall comply with a specified Standard, shall be satisfied by compliance with either of the following:

- i. Any relevant current national or governmental Standard of any member state of the European Communities or;
- ii. Any relevant international Standard recognised in such a member state provided the standard in question shall provide guarantees of safety, suitability and fitness for purpose equivalent to those provided by the standard which is specified in the Framework Agreement.

Where the Framework Agreement or the Works require any service or supply and the like to be provided, the Contractor shall be responsible for all of the following:

- i. for the procurement of such service and supply and the like and;
- ii. for the discharge of all costs of whatsoever nature incurred as a result of the provision of such service or supply and the like.

4.2 Execution and Completion of the Works

The Contractor shall execute and complete the Works in accordance with the Framework Agreement, Contract and the requirements of the specific Framework Call-off.

Ancillary works not specified in this document may be instructed by the Employer, in which case a Request for Proposal (RFP) will be issued.

4.3 EU Funding Obligations

Certain elements of the works to be delivered are co-funded by the European Union, currently some of the ITS scope comes under the CINEA Grant Agreement, with the possibility of additional scope being co-funded during the contract term. Accordingly, the Contractor will be required to comply with specific conditions set out in the grant funding agreement. These conditions will be incorporated into the relevant Call-Off Contract for the applicable services.

Examples of such conditions include, but are not limited to:

Visibility

- Display the EU emblem and “Co-funded by the European Union” on:

- Installed ITS equipment (where practical)
- Site signage (as directed)
- Key documents (as-builts, O&M manuals, commissioning records)

Evidence and Audit

- Provide photographic or documentary evidence of compliance for audit purposes.
- Cooperate with TII in meeting any additional visibility obligations.

Ownership of Results

- TII retains ownership of all outputs produced under the project, including:
 - The results of the work;
 - Any industrial or intellectual property rights (e.g., patents, copyrights);
 - All reports and documents related to the project.

5. GENERAL DESCRIPTION OF WORKS TO BE UNDERTAKEN UNDER THE FRAMEWORK AGREEMENT

5.1 Introduction

A general description of the Works that shall be executed and completed by the Contractor under the Framework Call-off shall be as given in paragraph 4.2 of this Part.

Notwithstanding the generality of paragraph 4.1 of this Part, the full scope of the execution and completion of the Works and the obligations of the Contractor in respect of such shall be ascertained by reference to the Framework Agreement and Framework Call-off as a whole, including the Works Requirements.

5.2 General Description

The Works carried out under this Framework Agreement Call-off shall be completed as per the requirements of these Works Requirements and as specified in the Framework Agreement Call-off.

In general, the Works will comprise of the supply and/or installation of items of electronic equipment at various locations on the road network as defined by each individual Framework Call-off. Each Framework Call-off will define the locations, type and number of devices to be supplied and/or installed, and will define the works required by the Contractor to test, integrate, commission and handover that equipment.

In the execution of the works, the Contractor will be required to liaise and collaborate with other Contractors, engaged by the Employer, including, but not limited to;

- TII ITS EMC Contractor;
- Network Intelligence & Management System (NIMS) Contractor;
- MMaRC Contractor or PPP Operator;
- M50 Traffic Flow Optimisation (MTFO) Deployment Contractor (DC) Contractor; and
- MOCC Operator.

In the execution of the works, the Contractor will be required to integrate equipment into systems provided by third parties, including but not limited to:

- TII AFMS;
- NIMS;
- Drakewell C2 Cloud Service;
- SolarWinds;
- TII Journey Time Management System;
- Coeval Periodic Speed Warning Signs Cloud Service; and
- Other systems as may arise during the framework period.

5.3 Traffic Safety and Management

The Contractor shall execute and complete Traffic Safety and Management for all Works in accordance with Appendix 1/17.

5.4 PSCS Duties

The Contractor will be required to undertake all necessary duties to carry out the role of Project Supervisor (Construction Stage) (PSCS) under the Health & Safety Act and Regulations, or liaise with another PSCS and project management, including coordination of all activities with other contractors, roadway operators and other parties.

5.5 Sub-Contracted Works

When the Contractor chooses to sub-contract part of the Works, it shall ensure supervision and control over such works and services. The Contractor shall determine and define:

- The processes and Works that are to be sub-contracted (including the scope and boundaries of the sub-contracted processes and Works and their interfaces with the Contractor's own processes and activities);
- The processes and scope for the sharing of knowledge and information between the Contractor and its sub-contractor(s);
- The responsibilities and authorities within the Contractor's organisation for managing the sub-contracted processes and Works.

6. ASSOCIATED SERVICES

6.1 Introduction

The Contractor shall ensure any equipment installed under the Framework Agreement communicates with the systems specified in the Framework Agreement Call-off.

Where the Framework Agreement Call-off involves the installation of equipment, the Contractor shall organise integration of system, coordination with Maintenance Contractor, NIMS contractor, MOCC and other appropriate service providers to move equipment into the operational environment. The Contractor shall be responsible for liaising with the operators of each system to ensure that equipment is promptly placed into the operational environment.

The Contractor shall be responsible for the delivery of any changes to existing operational systems, 6.2 through 6.8, and shall ensure changes are undertaken prior to the handover of equipment.

Where the Framework Agreement Call-off involves the installation of equipment, the Contractor shall be responsible for all costs associated with the integration of new equipment into the existing TII associated services.

6.2 Asset and Fault Management System (AFMS)

The AFMS is used in the fault and asset management of all ITS Assets and other Assets owned by TII.

6.3 Drakewell C2 Cloud Services

TII utilise Drakewell C2 Cloud Services to disseminate traffic data to the public via a public interface URL trafficdata.tii.ie and for back-office engineering management use via a separate URL admin.trafficdata.tii.ie. C2 is also used to detect and raise TMU & WIM faults, emailing defined maintenance contractor recipient email addresses. C2 also raises some of these faults on the AFMS.

6.4 Solar Winds Fault Monitoring (Orion)

TII utilise Solar Winds Fault Monitoring (Orion) to identify communications faults on roadside ITS Equipment. When communications faults are identified by Solar Winds Fault Monitoring (Orion), faults are automatically raised on the AFMS.

Solar Winds Fault Monitoring (Orion) monitors and reports all faults generated on VMS manufactured by Daktronics and VMS Ltd, and also from CCTV cameras.

6.5 Advanced Traffic Management System (ATMS)

The Advanced Traffic Management System (ATMS) is the computer system used to monitor and control the setting of Variable Message Signs and other roadside equipment, including journey time information, to update the TII Traffic Website and provide alerts to subscribing members of the public. It is also used to communicate to School Warning Signs for equipment analysis and school opening and closing timings.

6.6 Network Intelligence and Management System (NIMS)

NIMS is an overarching, adaptive computer system designed to replace TII's ATMS and allow TII to provide a more integrated road management service to road users.

NIMS is a management system that provides TII with the technological framework to enhance and integrate its processes to deliver motorway operational services. NIMS will be designed to receive and integrate information from multiple roadside traffic monitoring devices and provide control centre operators with a comprehensive view of real-time conditions on the motorway network.

NIMS will collect, aggregate and use data gathered by ITS equipment installed on the motorway network, including incident detectors, for use in real-time operations, as well as in future planning and investment decision-making. Located in the Motorway Operations Control Centre, NIMS will be operated 24/7, 365 days a year and enable TII to implement international best practice when operating the motorway network.

6.7 Journey Time Management System

ANPR devices supply data to a Journey Time Management System (JTMS) which calculates journey times between two locations. The journey times are transmitted to the relevant VMS by NIMS or the ATMS and made available on the TII website to provide real time information to road users.

6.8 Remote Diagnostics and Maintenance Terminals

All ERTs are connected to the MOCC PABX and Remote Diagnostics and Maintenance Terminals (RDMT). RDMTs poll each ERT periodically through SMS communication to identify faults. The Contractor shall ensure that any ERTs installed under the Framework Agreement communicate with the MOCC PABX and one of the existing RDMTs.

6.9 Software and Firmware

6.9.1 General

Software and/or firmware supplied under this Contract shall be produced to ISO/IEC 20000 and I.S. EN ISO 9001.

Software and/or firmware setup under this contract shall comply with requirements of ISO 27001, GDPR requirements and TII's information security and data management policies.

The Contractor shall ensure the latest firmware is installed prior to testing.

Where software is written or modified for the Employer's use subject to the conditions of the contract, the Contractor shall supply the source code to enable the software to be modified by a third party.

Any changes in licence fees or renewable licence fees payable to a third party must be notified to the Employer and/or the Employer's Representative.

The Contractor shall provide at least two sets of all operational software including, where appropriate, site-specific data.

All software supplied shall be clearly identified and include the appropriate issue details and date.

6.9.2 Equipment Requirements

To avoid the need for roadside visits to modify or upgrade equipment software or firmware, all equipment supplied under this Framework Agreement shall comply with the following:

- Achieve all operational requirements of the product using less than 50% of the available processor capacity;
- Software and constant data shall occupy less than 50% of the installed non-volatile memory, unless specified otherwise;
- Transient data shall occupy less than 50% of the installed volatile memory, under all operating conditions; and
- Shall be capable of remote download of device specific application software, updates and patches.

6.9.3 Automated Controlled Shutdown

The Contractor shall provide for automated shutdown of equipment if the environmental conditions in a roadside cabinet stray outside of the manufacturer's operating parameters via software scripts. Software scripts shall be provided to the project on a non-proprietary basis.

Start-up after a controlled shutdown shall be capable of being performed both locally and remotely.

7. PROGRAMME OF WORKS

The Contractor shall provide a programme of works in accordance with the conditions of the Framework Agreement Call-offs.

The programme shall be in the form of a Gantt chart, with the sequence of events scheduled as a function of a critical path analysis. It shall provide:

- Level of detail appropriate to each section of the works;
- Start- and end-dates for each item of works;
- Time for completion for each section of the works; and
- Time for completion for the whole of the works.

All items/activities listed within the programme shall be given a short title and numbered.

The relevant resources required to undertake each activity shall also be shown on the programme, including supervisory staff, plant and labour proposed to complete the works.

The works programme shall include dates for:

- Dates of factory acceptance test(s) (FAT);
- Delivery of equipment;
- Installation of the equipment;
- Dates of site acceptance test(s) (SAT);
- Testing of the equipment;
- Commissioning of the equipment;
- Systems test; and
- Dates by which information, if needed, is required from the Employer's Representative and/or other consulting engineers and stakeholders.

All operations shall be arranged so that the communications installation is completed, tested and the test results approved by the Employer's Representative at least eight weeks before the date of completion of the works to allow time for the Employer's Representative to commission the system.

The Contractor shall allow sufficient time in their programme for any repairs and re-testing which may be required to be completed satisfactorily before the eight-week commissioning period.

The Contractor shall provide facilities for the electricity supply company for service connections and for the Employer Representative's commissioning of the system.

The Contractor shall provide the Employer's Representative with full details of all personnel whom they propose to employ on the testing and terminating of cables. Such details shall be provided in writing 14 days prior to the commencement of cable termination. The written approval of the Employer's Representative shall be obtained prior to the commencement of such work.

8. ASSET MANAGEMENT

8.1 Asset Information

The Contractor will liaise with the TII Equipment Maintenance Contractor, MOCC and system operators to obtain the format and naming conventions used for each associated service and system. The Contractor shall utilise these naming conventions when providing information to the Employer's Representative and when naming/labelling assets.

The Contractor shall provide to the Employer's Representative information on equipment installed within 48 hours of substantial completion of works including the following:

- i. Asset reference number;
- ii. Asset type;
- iii. Asset description;
- iv. Asset photographs including: a picture of the asset with asset reference marking, a picture of the asset in relation to any other nearby assets and picture(s) of distinct asset parts, e.g. VMS sign and VMS controller; AID unit and AID loops.
- v. An accurate location of the asset including GPS coordinates, accurate to 10 metres of the asset;
- vi. Relevant drawings and site schematics (e.g. infrastructure and systems, equipment diagrams and configuration information);
- vii. An as-built drawing of equipment installed showing cable routes, installation positions, dimensions and other relevant information;
- viii. Manufacturer and its model /serial number;
- ix. Equipment operation and maintenance manuals;
- x. Details of the product development lifecycle, including period for manufacturer maintenance and support;
- xi. Status of each asset (e.g. operational, spare, disposed);
- xii. Date of commissioning and date of manufacture;
- xiii. Purchase cost and installation cost;
- xiv. A log of each change to the asset inventory record with dates;
- xv. Inventory of Spares;
- xvi. Relevant Health and Safety files and information;
- xvii. Test results;
- xviii. Any other relevant information.

8.1.1 Management of change

When any change is identified that can have an impact on the operation of the equipment, the Contractor shall assess the associated risks before the change is implemented at the Contractor's cost.

8.1.2 Works Records

The Contractor shall keep accurate and complete records for all works. Such records shall be available for inspection in both a paper and electronic form and shall be made available in a suitable format for upload to the AFMS upon equipment handover.

The Contractor shall ensure that job plans are kept updated at all times.

9. THIRD PARTY INTERFACES

9.1 Introduction

Third-party interfaces are subject to the requirements of the Framework Agreement Call-off.

Communicating openly and responsively with Third Parties is a key objective of the Employer. The Contractor shall provide support to the Employer in achieving this objective by establishing and implementing procedures that create and maintain effective communications with Third Parties.

9.2 Interface Agreements

The Contractor shall work collaboratively with Third Parties and produce interfacing agreements defining the physical, electrical and system interfaces and the associated processes and procedures to be applied for all operations.

Interface agreements shall define the following:

- i. The respective roles and responsibilities of each party to the agreement;
- ii. The approach for working with others;
- iii. Procedures by which the parties to the agreement will exchange information about, and monitor compliance with, their obligations under the agreement; and
- iv. A process for keeping the agreement under review and up to date.

Disagreements or disputes between the Contractor and third- party which may impact on the performance of the Works shall be reported to the Employer's Representative.

9.2.1 Nominated Liaison Representative

The Contractor shall nominate a Nominated Liaison Representative, to be responsible for preparing and maintaining all interface agreements and communications. The Nominated Liaison Representative shall pro-actively communicate, where required, with the Employer's Information Systems and Third Parties in relation to the Works. The Employer's Information Systems and Third Parties shall include, but are not limited to:

- i. TII;
- ii. TII's other ITS equipment installers;
- iii. Employer's Representative;
- iv. MOCC Operator;
- v. Road space booking system;
- vi. Employer's Advanced Traffic Management System ATMS;
- vii. Employer's Network Intelligence and Managed System (NIMS);
- viii. Employers Associated Services;
- ix. PPP Concessionaires;
- x. Motorway Maintenance (MMaRC) Contractor;
- xi. Local authorities;
- xii. National Transport Authority;
- xiii. Other state bodies;

- xiv. Utility suppliers;
- xv. Luas (Dublin Light rail) Operator;
- xvi. Other contractors (where works are scheduled that may impact the Works).
- xvii. TII Equipment Maintenance Contractor(s)

9.2.2 Liaison Procedures

Without prejudice to the provisions elsewhere within the Framework Agreement, the Contractor shall develop liaison procedures to manage any liaison that may be required with any party, including the Employer's Representative, relevant authorities, Third Parties and others. The liaison procedures shall be developed in accordance with the following principles:

- i. There shall be full consultation and co-operation between the liaising parties as far as possible;
- ii. Matters shall be prepared on a joint basis as far as possible;
- iii. Each party shall be given a reasonable opportunity to consider matters, and where information is supplied it shall include, or be accompanied by sufficient explanatory or other material to enable the information to be properly considered; and
- iv. So far as is practical, points arising shall be discussed immediately between those concerned, so that where in any liaison procedure there is reference to any material being sent for comment, this will be a reference to the final form of material, the substance of which has previously been discussed between those concerned.

While liaison procedures are guidelines of the best current assessment of sensible work practice, they may require amendment in the light of practical experience and, if so, they shall be amended as set out below. Where any party is dissatisfied with the operations of any liaison procedures and/or considers that they shall be amended in any way, the following provisions shall apply:

- i. the matter must immediately be brought to the attention of the Nominated Liaison Representatives, who shall, as soon as possible, discuss matters with a view to resolving the disagreement and reaching agreement on what action shall be taken, including any possible amendment to the liaison procedures; and
- ii. Should the Nominated Liaison Representatives fail to agree, then the dispute may be referred for conciliation as set out in the Framework Agreement.

9.2.3 Queries and Complaints

The Contractor shall deal with correspondence, emails and verbal communications relating to the Works received directly and/or indirectly from members of the public in an expeditious manner. Responses to enquiries and complaints shall be made to the Employer's Representative within 72 Hours, unless an accelerated response is required, to allow for checking and issuing of a reply by the Employer's Representative.

In the event that an enquiry or complaint is received from a Minister of the Irish Government, a member of Dáil Éireann or Seanad Éireann, or its staff, a response shall be made within one working day unless an accelerated response is required, and in such circumstances the response shall be provided as quickly as is reasonably practicable. Where it is anticipated that a reply will not be possible within an agreed period the Contractor shall send an acknowledgement indicating the timescale for a full response.

The Contractor shall keep a record of all such queries, complaints and actions taken to resolve them and include a summary of them in progress reports.

9.3 MOCC Operator

The MOCC Operator is currently based at the Dublin Tunnel Control Building and coordinates road traffic and travel information relevant to the operation of the national road network on behalf of TII.

9.3.1 Liaison and Communications

The Nominated Liaison Representative shall meet with the MOCC Operator and develop an Interface Agreement, which shall be submitted to the Employer for approval.

The Interface Agreement shall include, but not be limited to, an undertaking from the Contractor to comply with the requirements of the MOCC Operator in respect of the following:

- i. Health & Safety Requirements;
- ii. Attendance at Dublin Tunnel inductions;
- iii. The use of MOCC Operator Change Control and access procedures which the Contractor shall comply with, e.g. in maintaining the core network switches;
- iv. Submission of method statements and risk assessments for all works within the MOCC or that may impact the operation of the MOCC;
- v. Provision of feedback to the MOCC Operator on the overall performance of the system to drive continual improvement including the attendance at an annual review meeting if requested;
- vi. Provision of information in accordance with these Works Requirements;
- vii. Exchange information freely to assist them in meeting their operational needs and those of users of the Road Network;
- viii. Co-ordination of testing activities as part of works and Site Acceptance Tests; and
- ix. The Contractor shall notify the MOCC Operator of any impending change to equipment availability.

The Nominated Liaison Representative shall supply the MOCC Operator with a dedicated single direct telephone number and a single email address to allow contact with the Contractor 24 hours a day for the duration of the works.

9.3.2 Information Provision to MOCC

The Contractor shall adopt the following procedures for works on the road network:

- The Contractor shall review the road space booking system to determine whether another Contractor is working in the area of the site;
- If no other Contractor is working in the area, the Contractor shall notify the MOCC Operator, the relevant Local Authority, the relevant PPP Concessionaires or MMaRC that they will be attending the site to repair the Fault and shall record the visit on the road space booking;
- If another Contractor is working in the area of the site, the Contractor shall obtain the contact details of the Contractor working adjacent to the site and co-ordinate all activities in advance of attending the site.
- Where lane closures are required for works, the Contractor shall request approval from An Garda Síochána. The period of closure shall be the minimum to facilitate the works.

9.3.3 MOCC Road Space Booking System / PPP Operator Traffic Management Information System

Where applicable, the Contractor shall comply with the requirements of the TII Road Space Booking System / Traffic Management Information System. The Road Space Booking System / Traffic Management Information System records details of all ongoing and planned traffic management works on the entire road network.

Prior to commencing any traffic management works, the Contractor shall access the system to determine whether other works are being undertaken in the vicinity. In the event that other traffic management works are being carried out, the Contractor shall liaise and co-ordinate with the contractor carrying out the works in order to minimise disruption to traffic.

The Contractor shall upload the following information to the Road Space Booking System / Traffic Management Information System:

- Traffic management plans and drawings;
- Temporary traffic management plans and drawings; and
- Contingency plans.

Following the submission of data and commencement of traffic management works on site, the Employer may carry out a site visit and an independent inspection of the works. Following the site visit, the Contractor shall be required to comply with any recommendations outlined by the Employer through the Employer's Representative.

9.4 ITS Equipment Maintainers and Installers

The Contractor shall enter into an Interface agreement with other contractors, including but not limited to:

- TII ITS EMC Contractor;
- TII MTFO EDC Contractor; and
- any other relevant ITS equipment installers as advised by the Employer's Representative.

In addition to the requirements elsewhere in Volume A, The Contractor's interface agreement with other ITS equipment maintainers and installers shall include but not be limited to:

- Identification of methods of communication to be used and any specific circumstances related to each method.
- A schedule of meetings and the circumstances under which additional meetings will be held and the notice period(s) required;
- Agreed notification timeframes for works requiring interface and required response timeframes for provision of information and services;
- An agreement to share and regularly update programmes for any upcoming installation works in close proximity to works being undertaken by the other contractors;
- Identification of parking bays to be used during site works that are common to both contracts and procedure for working at such locations;

The Contractor shall ensure all of its subcontractors shall adhere to the interface agreement. Any correspondence between a subcontractor and other contractors shall have the parent contractor in copy.

The Contractor shall respond to all requests from the other contractors within 18 hours providing one of the following:

- The information\input requested,
- Confirmation that the action requested has been completed,
- A timeline for when the action will be undertaken, or information\input provided within 2 days or within the timeframe specified by the Employer's Representative,
- The reason the action cannot be undertaken, or information\input provided within 2 days or within the timeframe specified by the Employer's Representative along with any queries that the Contractor has in relation to the request.

The Contractor shall utilise shared parking bays with the capacity for more than one vehicle in a manner that allows for the entire parking facility to be utilised fully. For the safe entry and exit of a vehicle from the parking bay, sufficient space shall be given, allowing for unobstructed view of the site and traffic in all directions.

The Contractor shall leave shared cabinets, structures and parking bays, and any other location of physical interface, in a secured and tidy manner with due care being given to third party equipment.

The Contractor shall ensure that all information provided to the other contractors is up to date, accurate and complete. If notified by the other contractors or the Employer's Representative that the information provided by the Contractor is not up to date, accurate or complete, the Contractor shall provide updated information addressing the identified issues within 2 days.

All written correspondence with the other contractors shall have the Employer's Representative in copy and the Employer's Representative shall be notified of any meetings or teleconferences with the other equipment maintainer or installer.

9.4.1 Planning of Installation works by the Contractor

Unless otherwise notified by the Employer's Representative, the Contractor shall provide design details and specification of new equipment to be installed on the network to the other contractors 12 weeks prior to the installation date or as soon as possible thereafter. The Contractor shall provide information that includes but is not limited to:

- Date for and estimated duration of installation works at each site.
- Purpose, functionality and location of the new equipment.
- Equipment's full specification, electrical power and network connectivity requirements.
- Network connection details including but not limited to media type to be used, required number and type of network switch ports to be opened number of IP addresses required, etc.
- Details on the use of existing roadside cabinets used by the other contractors and space and power requirements.
- Details on the use of existing structures used by the other contractors.

- Details on the use of existing parking bays used by the other contractors that were previously unused by The Contractor.

The Contractor shall notify The IP Design Authority of the intention to use an existing access switch, fibre media convertor(s) or an additional access switch as part of the connection to the fibre network. If the IP Design Authority advises that a different approach should be considered, the Contractor shall notify the Employer's Representative immediately.

The Contractor shall notify any other contractors before and immediately after works in cabinets inside the works area of the other equipment installer. The notification provided before the works shall include the time and date of the works, an estimate for the length of the works and the impact that the works will have on the Third-party equipment.

For equipment that will use existing fibre, the Contractor shall notify the other contractors of the intention to use fibre media convertors or an additional access switch as part of the connection to the fibre network. If the other contractor advises that a new access switch be used instead of multiple fibre media convertors (or vice versa) the Contractor shall notify the Employer's Representative immediately.

For equipment that will use existing fibre, the Contractor shall agree inspection, testing and handover processes for the new access switch or fibre media convertor(s) and associated cabling to the relevant access switch with the other contractor, or otherwise engage the other contractor to provide the same or similar connection to the fibre network.

The Contractor shall take due care when installing equipment in cabinets shared with other maintainers and shall arrange the presence of relevant parties.

9.4.2 Installation works by the Contractor

The Contractor shall notify the other contractors of any planned installation works involving parking bays, cabinets or structures used by the other contractors one month prior to the works.

The details provided in the notification shall include the start date and duration of works at each location; the start date and duration of any downtime for assets included in the works of the other contractors, including a list of the affected assets for each location; and the start date and duration for which access to each cabinet, parking bay or structure used by the Contractor shall be unavailable. Additionally, if other contractor's equipment needs to be moved to facilitate installation works, the Contractor shall notify the other contractor and arrange for their attendance to carry out the removal and reinstallation of the equipment.

One month prior to any relevant installation, the Contractor shall liaise with other contractors to arrange their attendance to facilitate any specific access required to the site and carry out any inspection, testing or handover of assets.

The Contractor shall request network configuration details for each device to facilitate connection to the Employer's network from the IP Design Authority. The Contractor shall provide to the IP Design Authority the MAC addresses of all equipment to be installed. The Contractor shall configure all newly installed equipment with the configuration details as advised by the IP Design Authority.

9.4.3 Handover of works by the Contractor

The Contractor shall facilitate an inspection and testing of all equipment by the Equipment Maintenance Contractor prior to handover of equipment. Asset information as per elsewhere in Volume A, if not already captured on the AFMS, shall be provided by the Contractor in a format approved by the Employer's Representative. The Contractor shall provide training on the maintenance of equipment models installed but not already maintained by the Equipment Maintenance Contractor.

The Contractor shall, for any asset sharing a gantry or cabinet with other contractor's maintained equipment, prior to handover of said assets, have all assets and asset cables clearly marked and labelled.

The Contractor shall provide backup configuration files for any asset being handed over to the Equipment Maintenance Contractor.

10. CONTRACTOR'S PERSONNEL

At least two weeks prior to the Starting Date, the Contractor shall submit to the Employer's Representative details of the Contractor's personnel proposed to provide the Works. The details shall include:

- Names, addresses (work), email and contact numbers (mobile and landline);
- Details of experience, training and education that demonstrate their competence to provide the Works;
- Training provided to the Contractor's Personnel to undertake their roles;
- Health & Safety training;
- Details of appropriate equipment required to fulfil the Contractor's obligations; and
- Driver's license.

The Contractor's Personnel's levels of electrical competence for dealing with the following:

- Exposure to the risk of electric shock during works; or
- Making electrical circuits "dead" for the purpose of others working on the equipment.

The level of competence required for any person to carry out work on electrically energised equipment shall always be in accordance with safe working practices and in accordance with the current editions of the following Standards:

- National Rules for Electrical Installations, I.S. 10101:2020+A1:2024 by the National Standards Authority of Ireland (NSAI);
- The Safety, Health and Welfare at Work (General Application) Regulations 2023;
- Current ESB Regulations, Codes of Practice and Guidelines including ESB National Code of Practice for Customer Interface 4th Edition 2025.

The Contractor shall provide the Contractor's Personnel with all necessary tools and equipment required to undertake their activities.

Only Contractor's Personnel, whose details have been submitted by the Contractor and have completed inductions with all relevant Third Parties, shall carry out the duties defined in this Contract. Any update to the list of personnel should be communicated and coordinated in advance with the TII and the Employer's Representative to be approved. Updates to the list of personnel shall be submitted to the Employer's Representative quarterly.

11. HANDOVER OF EQUIPMENT

11.1 General

The Contractor shall make appropriate resources available for the handover of equipment to the ITS Equipment Maintenance Contract, other maintenance contractors and operators of the equipment. This shall include facilitating and assisting in the connection to appropriate associated services, physical handover of equipment and spares and providing training as specified in these Framework Agreement documents.

11.2 Warranty

11.2.1 General

The equipment shall be fully guaranteed for the periods defined in the relevant sections of the Call-off. The Contractor shall be required to provide warranties and guarantees in this regard.

The Contractor shall provide a guarantee that the equipment will be furnished free from defects in design, material and workmanship, and will conform to, and perform in accordance with, the Specification when leaving the manufacturer's plant. It shall be the Contractor's responsibility to conduct the required testing to substantiate this guarantee and ensure that design parameters for the required useful life were used, assuming normal conditions of installation and operation.

The Contractor shall maintain suitable records for a period of at least five years of all tests performed and results of same.

The Contractor shall provide, as part of the handover documentation, confirmation that the manufacturers ratify it as being fully compliant with their system definition and product warranty.

Warranties shall conform to, and/or allow for, the following:

- Products and labour for replacement of products in the event of a problem
- The warranty must be issued by the manufacturer and not the Contractor or a distributor
- The warranty must provide full application assurance of current and future applications that have not yet been developed
- Confirm the manufacturer will review the final design and inspect the site before issuing the warranty
- Provide details of what in-country support is available to support the warranty from the manufacturer
- Provide a brief description of the warranty process should it be invoked
- The Contractor shall state the type of system/installation warranty which will be provided on completion of the system

11.2.2 Defects Period

The defects period shall commence after issuance of the Substantial Completion Certificate by the Employer.

During the defects period the responsibilities of the Contractor shall include the collection, and replacement of faulty equipment from the equipment maintainers premises, and correction of problems notified to the Contractor by the Employer's Representative.

During the defects period the repair of equipment and/or correction of faults shall be undertaken by the Contractor within the following timescales:

- For serious equipment faults that cause a failure of the operation of a delivered item of equipment, a temporary replacement item shall be provided by the Contractor to the maintenance contractor as soon as is practicable, and a permanent replacement item returned to the maintenance contractor within 15 working days of notification
- All other faulty items that are repairable shall be repaired and returned to the Employer's maintenance contractor within 30 working days of notification

The Contractor shall maintain an adequate supply of spare parts and cables to ensure that the above repair times are met.

During the defects period, if required by the Employer, the Contractor shall attend on site to assist with the diagnosis and correction of faults on the equipment within 24 hours of notification by the Employer.

The Contractor shall ensure that the design of all the elements of the equipment to be provided takes cognisance of the need to maintain the equipment in a safe manner.

12. CLAIMS BY AND AGAINST THIRD PARTIES

12.1 General

Claims by third parties are claims by third parties against the Employer or a Third Party arising out of the performance of the Services.

Claims against third parties are claims against third parties for damage to the equipment.

PPP Road means a section of road which is maintained pursuant to a Public Private Partnership contract between the Employer and a contractor (a "PPP Contractor"), and which are identified as part of the Background Information.

12.2 Claims by Third Parties

Where notification of a claim by third parties is received by the Contractor (including any formal or informal notification of the commencement of legal proceedings), the Contractor shall promptly inform the Employer of the claim and shall within 14 days send the following to the Employer:

- a) Copies of the particulars of the claim including any original claim correspondence with its original envelopes and packaging;
- b) Completed Claim by Third Parties Form (see ANNEX 6/1);
- c) A copy of the An Garda Síochána accident report if available;
- d) A report on relevant observations made at the site by the Contractor on the cause of the claim (e.g. dimensions and a diagram or preferably photograph of the loss or damage and any property or circumstance relating to the claim), including a view as to how the alleged circumstances which have given rise to the claim have arisen (including how the loss or damage has been caused, when it arose and whether it could have formed between inspections) and an opinion as to whether the loss or damage represents a hazard to users of the road network, noting that not all of this information may be feasible if claims are received many months after the incident;
- e) Particulars of the most recent inspections carried out prior to the incident giving rise to the claim; and
- f) Such other information as the Employer's Representative may request.

Where a claim is received by the Employer or Employer's Representative or otherwise than from the Contractor, the Contractor shall submit to the Employer's Representative within 14 days of request the information referred to in paragraphs 12.2 (a) to (f) above in relation to the incident.

The Employer shall be responsible for managing the conduct of any claims. The Contractor shall provide requested information in a timely manner to enable the Employer to progress the claims.

The Contractor shall retain records of all of the information sent to the Employer's Representative, together with correspondence with the public, records of work and works carried out and any discussions of works problems with the Employer's Representative and/or An Garda Síochána. Such records shall be maintained in accordance with the conditions of contract and for such period as may be specified by the Employer.

12.3 Claims Against Third Parties

Subject to the following provisions of this section, the Contractor in accordance with the Framework Agreement shall repair, replace or otherwise make good any loss or damage to the equipment caused by act or default of third parties.

Where the loss or damage is

- a) on a MMaRC Road or a PPP Road, the Contractor shall not be responsible for structural repairs to equipment but shall be responsible for:
 - o electrical and electronic repairs; and
 - o if directed by the Employer's Representative, replacement of the equipment including cabinets, mounting equipment and communications equipment.
- b) not on a MMaRC Road or PPP Road, the Contractor shall be responsible for all repairs/replacement to the equipment save where instructed otherwise by the Employer at its discretion.

Notwithstanding any other provision of the Framework Agreement if the loss or damage in question:

- a) could give rise to injury to persons or damage to property and/or;
- b) could adversely affect the reputation of the Employer or Third Parties,

the Contractor shall, together with other contractors where appropriate, immediately upon the earlier of:

- a) receipt of a Support Request indicating that the loss or damage falls within the ambit of (a) and/or (b) above; or
- b) upon otherwise becoming aware that the loss or damage falls within the ambit of (a) and/or (b) above,

implement such measures as are required to make safe the loss or damage in question and prevent, or if that is not objectively possible, minimise any loss or damage to persons, property or the reputation of the Employer or Third Parties.

Where, in performing the Works, the Contractor discovers that damage to equipment has occurred which could constitute a hazard to road users, the Contractor shall:

- a) immediately report the issue to An Garda Síochána if the loss or damage has occurred on a section of road that is not a MMaRC Road or a PPP Road;
- b) immediately report the issue to the relevant MMaRC Contractor or PPP Contractor if the loss or damage has occurred on a MMaRC Road or a PPP Road.

In respect of a loss or damage, other than those specified, the Contractor shall, immediately upon performing its initial evaluation of the loss or damage, submit to the Employer's representative a copy of the report all relevant information pertaining to the loss or damage.

In carrying out any works or services in accordance with paragraph 12.3:

- a) the Contractor shall execute the repair or replacement in accordance with the provisions of the Works Requirements and shall maintain sufficient records of labour, plant and materials used in the repair or replacement to allow subsequent determination of the costs;
- b) the Contractor shall keep the Employer's Representative continuously apprised of the projected out-turn cost of the repair or replacement;

- c) the Employer's Representative may request the temporary or permanent suspension of the repair or replacement, provided that the Employer's Representative is satisfied that the loss or damage no longer poses a risk of injury to persons or damage to property or the reputation of the Employer or Third Parties. The provisions of paragraph 12.3.6 shall then apply to the loss or damage.

For the purposes of this section 12.3, the cost of the repair or replacement shall be calculated on the basis of the prices in the Pricing Document, and in the event of disagreement between the parties, such cost shall be determined in accordance with the conditions of contract. However, the Contractor shall, if so instructed by the Employer's Representative, carry out the repair or replacement notwithstanding the existence of such dispute. For the avoidance of doubt, the determination of cost in the manner provided shall not prejudice the entitlement (if any) of the Contractor to seek the recovery of his actual costs from third parties.

ANNEX 6/1 CLAIMS BY THIRD PARTIES

In consultation with the Employer’s Representative, the Contractor shall develop a standard form which shall be used to gather the information shown in the draft form below. The Contractor shall ensure that the information given on this form covers all aspects relevant to the claim, in so far as that information is available. The information should be based on fact, not opinion (except Section 12) and should be as complete as possible. The Contractor shall be aware that this information may be subject to examination during any legal proceedings where statements may be scrutinised under oath.

1. Network	
Network	

2. Particulars of Incident			
Motorway/Road Number			
Location (e.g. town, county or other distinguishing features, proximity to nearest marker plate if on motorway)			
Date		Time (24 hr)	
Description of incident (describe the incident & provide a plan or sketch map. Enclose photos if available)			

3. Details of Claimant				
Title		Surname		Forename
Address				

4. Details of Claimant's Agent (if applicable – e.g. solicitor, insurance company, or other)			
Name			
Address			
Reference (if known)		Telephone Number	
5. Type of Claim			
Amount Claimed €			
5.1 Damage to Vehicle	Yes/No		
Details of Damage to Vehicle			
Type of Vehicle			
Registration Number		Make	
Year of Registration		Model	
5.2 Damage to Other Property	Yes/No		
Description of Property			
Details of Damage to Property			
Is the damaged property available for inspection?	Yes/No		
5.3 Injury to person	Yes/No	<i>If yes complete Section 12</i>	

6. Witnesses: provide details of any witnesses, or persons having knowledge, of the incident. If they employees of the Contractor, provide a copy of their statement.									
Name									
Address									
Telephone Number									
Contractor Employee		Yes/No							
Name									
Address									
Telephone Number									
Contractor Employee		Yes/No							
7. An Garda Síochána Report									
Does An Garda Síochána have a report of the accident (if yes attach a report)						Yes/No			
8. Conditions and Visibility									
Visibility									
Was visibility good or poor?						Good/Poor			
Did the incident/accident happen after lighting up time?						Yes/No			
If yes, were the street lamps lit or unlit?						Yes/No			
Did the incident/accident happen on an unlit road?						Yes/No			
Were road works being undertaken?						Yes/No			
Weather Conditions									
Dry	Y/N	Wet	Y/N	Fog/Mist	Y/N	Snow	Y/N	Ice	Y/N
If any signs (including VMS) were in operation state the type and if VMS give details of the message shown. (Show their position on the sketch in Section 2)									

9. Roadworks	
If the claim refers to an incident alleged to be at roadworks please provide details about the contractor undertaking the works:	
Name	
Address	
State title of contract (if known)	
Contractor's Employer	
What roadworks warning signs were displayed at the time of the accident?	
Did they comply with the Traffic Signs Manual?	
Where were the signs positioned and what messages were displayed (including VMS)? Show the position on the plan/sketch requested in Section 2)	
Were Statutory Undertakers involved?	Yes/No
If yes provide details	

Name			
Address			
Telephone Number			
Contact Name			
10. Defect or Obstruction of the Network			
If the claim refers to an alleged Defect please answer the following questions			
Were you aware of the alleged Defect or obstruction prior to the incident?	Yes/No		
If yes date		Category	1/2
How did you become aware of the Defect?			
Routine Inspection		Claimant	
Callout (attach report)		Other (specify below)	
Other Details			
On what date was work last done on the site before the incident			
Who did the work?			
Name			
Role (e.g. contractor)			
How often is the site inspected?			
How is it normally inspected?	Vehicle		By Foot
What was the condition at the time?			
What sort of inspection was it?	Detailed		Safety
If a safety inspection how was it carried out?	Vehicle		By Foot
If by vehicle, how many people were in the vehicle?			
What works has been done since the incident?			

11. Cause of Claim – fill in the relevant section							
11.1 Vehicle Damage							
Please X if the incident was claimed to have been caused by any of the following							
Pot Hole		Trench		Exposed Ironwork		Over-banding	
Missing Cat's Eye	Y/N	Were any missing from the site?		Y/N/Don't Know			
Flooding	Y/N	Details of Cause					
Slippery Road	Y/N	Provide details of salting arrangements below					
Time notified by weather centre or An Garda Síochána							
Time salting began							
Time salting completed							
Direction of treatment vehicle							
Speed of treatment vehicle							
Amount of spread							
If appropriate were warning lights or signs displayed?				Y/N			
Full Description							
11.2 Property Damage							
Please X if the incident was claimed to have been caused by any of the following							
Vibration		Flooding		Roadworks		Other	
Full Description							
11.3 Pedestrian Trip							
Please X if the incident was claimed to have been caused by any of the following							
Upstanding Paving Slab		Rocking Pavement Slab		Reinstatement Defect		Other	
Please describe including dimensions							
Full Description							

Only complete the below if Section 5.1 is “Yes”			
12. Personal Injury Claim. Details of injuries:			
Also enclose the following documents for a period of 12 months prior to the accident			
<ul style="list-style-type: none"> • Records of inspections for the relevant section of road • Records of complaints for this section of road • Records of other accidents for this section of road 			
13. Your opinion of the claim			
Please provide a full general opinion of the claim with your view on liability. <i>Note: the form will be returned if this section is not completed</i>			
Signature		Position in Company	
Name			
Address			
Tel. Number			
Email Address			

ANNEX 6/2 CLAIMS AGAINST THIRD PARTIES FORM

In consultation with the Employer's Representative the Contractor shall develop a standard form which shall be used to gather the information shown in the draft form below.

Damage to National Roads Network Property

1. Contractor					
Name					
Address					
Reference					
Contact					
Telephone					
Email					
2. Date and Time of Incident					
Date		Time (24 hr)			
3. Road or Motorway Number and County					
Road		County			
4. Weather					
Dry		Wet/Damp		Snow/Frost	
High Winds		Fog		Flood (surface water over 3cm deep)	
5. Description of property to be replaced and type of damage					
Property	(X all that apply)	Property	(X all that apply)		
Bridge/Gantry		Comms			
Fencing/Barriers		Lighting Column			
Other Road Authority Land		Parapet			
Road Surface		Signage			
Emergency Telephone Box		Traffic Management			
Type	(X all that apply)	Type	(X all that apply)		
Collision		Debris			

Fire		Spillage	
Theft		Vandalism	
Details			
6. Date of Repairs (or estimated completion date)			
7. Final Cost of repair including a full breakdown (attach breakdown), if not available an estimate must be provided and finalised accounts submitted within 6 weeks of the repairs			
Final Costs		Estimated Costs	
8. An Garda Síochána attendance details and report (inc officers name and station)			
Name			
Reference			
Station			
An Garda Síochána did not attend			
Report prepared by An Garda Síochána	Yes/No/Unknown		
Report available and attached?	Yes/No		
9. Damage reported by (name and address, if not An Garda Síochána)			
Name			
Address			
Town/City			
County			
10. Number of vehicles with any details known			
Non vehicular involvement with any details known	Yes/No		
11. Non vehicular involvement. Names and addresses of persons involved or responsible and reasons for apportioning liability, most seriously injured must be recorded			
Name		Name	
Address		Address	
Town/City		Town/City	

County		County	
Reasons			
12. Incidents involving vehicles. All vehicles must be listed with as many details as available			
Vehicle Details			
Registration		Registration	
Make		Make	
Model		Model	
Driver Details			
Driver Name		Driver Name	
Address		Address	
Town/City		Town/City	
County		County	
Registered Owner			
Owner (if not driver)		Owner (if not driver)	
Address		Address	
Town/City		Town/City	
County		County	
Insurance Details			
Policy No. (if known)		Policy No. (if known)	
Insurer		Insurer	
Address		Address	
Town/City		Town/City	
County		County	
Injuries <i>Most seriously injured passenger (if any)</i>			
Name		Name	
Address		Address	
Town/City		Town/City	
County		County	

13. Witnesses					
Name		Name			
Address		Address			
Town/City		Town/City			
County		County			
Details					
14. Details of how the incident occurred and any additional information					
Contractor and/or call log attached	Yes/No	Photos attached	Yes/No	No further details available	Yes/No
Details					
15. Reasons for passing details of claim to NRA TII					
Cost of repair exceeds Contractor Threshold	Yes/No	Fatality	Yes/No	Other (provide below) reason details	Yes/No
16. Contractor Authorisation					
Name		Position			