**Technical Specification** 

**Version 5.0.1**

**December 2008**

**New Roads and Street**

**Works Act 1991**

****

**Technical Specification**

**for the Electronic Transfer**

**of Notifications (EToN)**

**Technical Specification for the Electronic Transfer of Notifications - Version 5.0.1**

December 2008

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**DOCUMENT CONTROL**

**Current version**

| **Date** | **Version** | **Status** | **Editor** | **Comment** |
| --- | --- | --- | --- | --- |
| 14 April 2008 | 5.0 | Final | EToN Developers Group | Permits version |

**Change history**

| **Date** | **Version** | **Status** | **Editor** | **Comment** |
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| 16 Feb 2008 | 5.0 | Draft | EToN Developers Group | Permits version |
| 01 Dec 2008 | 5.0.1 | Draft | EToN Developers Group and LGIH | Introduction of DFT 7.1 format for LSG upload and download |

**Some of these changes will affect technical implementation and interoperability. It is essential that software developers carefully review the current release to ensure that all significant changes are identified. Please contact DfT if in any doubt at streetworks.queries@dft.gsi.gov.uk.**

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**GLOSSARY**

American Standard Code for Information Interchange (**ASCII**)

Character encoding based on the English alphabet. ASCII codes represent text in computers, communications equipment, and other devices that work with text. The first edition of the standard was published in 1963; there was a major revision in 1967 and the most recent update was in 1986. It currently defines codes for 128 characters: 33 are non-printing, mostly obsolete control characters that affect how text is processed, and 95 are printable characters. Most modern character encodings, which support many more characters, have a historical basis in ASCII.

Additional Street Data (**ASD**) Used to provide additional street attribute data such as reinstatement categories for the NSG. ASD is held on the NSG Concessionaire’s

website alongside the NSG.

BS7666 British Standard relating to spatial datasets for geographical referencing. BS7666 Part 1 provides a specification for a street gazetteer.

Central register A register covering two or more street authority areas that is maintained by one single authority, the ‘register authority’. For example, a central

register could include all authorities in a metropolitan area.

Co-ordination Code of Practice Code of Practice for the Co-ordination of Street Works and Works for Road Purposes and Related Matters

Data model A generalised, user-defined view of data representing the real world.

Dataset A set of data that share common characteristics and that are managed as a subset of the data within a database.

DEC-NSG Current version of the Data Entry Conventions and Best Practice for the National Street Gazetteer, published by the Local Government

Information House (LGIH) as part of the Improvement and Development

Agency (IDeA).

DTF 7.1 Current version of the National Street Gazetteer Data Transfer Format, published by the Local Government Information House (LGIH) as part of

the Improvement and Development Agency (IDeA).

Demilitarised Zone (**DMZ**) In computer networks, a DMZ is a computer host or small network inserted as a ‘neutral zone’ between a company's private network and

the outside public network. It prevents outside users from getting direct

access to a server that has company data. A DMZ is an optional and

more secure approach to a firewall and effectively acts as a proxy

server as well.

Digital National Framework (**DNF**)

e-Government Interoperability Framework **(e-GIF)**

DNF is an industry standard for integrating and sharing business and geographic information from multiple sources (www.dnf.org).

The e-GIF defines the technical policies and specifications governing information flows across government and the public sector. They cover interconnectivity, data integration, e-services access and content management. The associated technical policies and specifications are contained in the Technical Standards Catalogue (TSC).

EToN Electronic Transfer of Notices

EToN 3 Refers to all versions of EToN up to and including EToN 3, where notice data was exchanged via FTP in “Appendix E” format

EToN 4 The version of EToN that first introduced the use of Web Services for notification exchange.

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EToN 5 The current version of EToN as defined in this specification

eXtensible Markup Language (XML)

XML is a general-purpose markup language used on the Internet to describe contents of documents, datasets and other entities. It is classified as an extensible language because it allows its users to define their own tags. Its primary purpose is to facilitate the sharing of data across different information systems, particularly via the Internet. It is a simplified subset of the Standard Generalized Markup Language (SGML), and is designed to be relatively human-legible.

File Transfer Protocol (**FTP**) A standard internet application protocol which allows a user on one computer to transfer files to and from another computer over a TCP/IP

network (e.g. Internet).

Firewall A system designed to prevent unauthorised access to or from a private network. Firewalls can be implemented in both hardware and software,

or a combination of both. Firewalls are frequently used to prevent

unauthorised Internet users from accessing private networks connected

to the Internet, especially intranets. All messages entering or leaving the

intranet pass through the firewall, which examines each message and

blocks those that do not meet the specified security criteria.

Gazetteer A list of spatial entities held in computer or printed form, such as properties or streets, which allows for rapid search or query.

Hypertext Transfer Protocol (**HTTP**)

A standard internet application protocol used for communication between web servers and clients.

Internet Service Provider (ISP) An ISP is a business or organisation that provides Internet access and related services to consumers (and other ISPs). ISPs use a wide range

of communications technologies to allow customers to connect to their

network. For medium-to-large businesses, this includes high-bandwidth

technologies such as SHDSL, Ethernet, Gigabit Ethernet, Frame Relay,

ATM, satellite Internet access and SONET.

Level (1, 2, or 3) gazetteer The type of street centre line geometry implemented in a street gazetteer, as defined in BS7666. Level 3 provides full link/node

geometry.

Local register A register that is maintained by a single street authority for their own geographic area and will include information on all streets.

Local street gazetteer (**LSG**) A spatial dataset based on BS7666 containing details of all streets in a local highway authority area. It is created and maintained by the local

highway authority regardless of maintenance responsibility for the

streets.

National Grid A metric grid based on the Transverse Mercator Projection developed by Ordnance Survey in 1936 for use in Great Britain. Referred to as

OSGB36, it is the de facto standard projection for display of UK based

mapping.

National Grid Reference (**NGR**) The British National Grid reference system is 2D only, so consists of an easting and a northing coordinate.

Nationally consistent street gazetteer (**NSG**)

Notice management system (**NMS**)

A set of LSGs forming a seamless national dataset.

An EToN-compliant computer application for use by undertakers and street authorities in England and Wales to exchange and manage NRSWA notifications and related information.

NSG Custodian The body appointed to manage the NSG on behalf of local highway authorities.

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Port Ports are typically used to map data to a particular process running on a host computer. In TCP each packet header will specify a source port

and a destination port, as well as the source and destination IP

addresses. A process may ‘bind’ to a particular port to send and receive

data, meaning that it will listen for incoming packets whose destination

port matches that port number, and/or send outgoing packets whose

source port is set to that port number. By default, HTTP uses port 80.

Primary Notice Authority The Street or Permit Authority responsible for the coordination of Street Works on the specified street or part street. In the case of Private

Streets this is the Local Highway Authority whose area covers the

Private Street.

Proxy server A server that acts as an intermediary between a client and the server the client wants to access. It is the proxy server that makes the request

to the server of interest and passes back the response to the client. A

proxy server may alter the client's request or the server's response and

may service the request without contacting the specified server. The

proxy server effectively hides the true network addresses.

Schema In general, a schema is an abstract representation of an object's characteristics and relationship to other objects. An XML schema

represents the interrelationship between the attributes and elements of

an XML object (for example, a document or a portion of a document).

Simple Object Access Protocol (**SOAP**)

Street events Data Exchange Protocol (**SDEP**)

Transmission Control

Protocol/Internet Protocol (**TCP/IP**)

Unicode Transformation Format (**UTF**)

SOAP is an XML-based communication protocol for accessing a web service over HTTP. It is used to send messages and exchange information between applications. SOAP provides a way to communicate between applications running on different operating systems, with different technologies and programming languages. The first public working draft on SOAP was published by WC3 in December 2001.

A common data exchange protocol for street works registers and other systems handling street events data. It comprises an XML data schema and web service WSDL for exchanging information about street works, road works and street events between systems.

The Transmission Control Protocol (TCP) is one of the core protocols of the Internet protocol suite, often referred to as TCP/IP. Using TCP, applications on networked hosts can create connections to one another, over which they can exchange streams of data using Stream Sockets. The protocol guarantees reliable and in-order delivery of data from sender to receiver. TCP also distinguishes data for multiple connections by concurrent applications (e.g. web server) running on the same host.

Unicode is an industry standard allowing computers to consistently represent and manipulate text expressed in any of the world's writing systems. Developed in tandem with the Universal Character Set (UCS) standard, Unicode consists of a repertoire of about 100,000 characters, a set of code charts for visual reference, an encoding methodology and set of standard character encodings, an enumeration of character properties such as upper and lower case, a set of reference data computer files, and a number of related items, such as character properties, rules for text normalization, decomposition, collation, rendering and bidirectional display order (for the correct display of text containing both right-to-left and left-to-right scripts).

UTF-8 (8-bit UCS/Unicode Transformation Format) is a variable-length character encoding for Unicode. It is able to represent any character in the Unicode standard, yet the initial encoding of byte codes and character assignments for UTF-8 is backwards compatible with ASCII (single byte). The standard has been implemented in many recent

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technologies including XML.

Uniform Resource Locator (**URL**) URL is a widespread synonym for Uniform Resource Identifier (URI). The idea of a uniform syntax for global identifiers of network-retrievable

documents was the core idea of the World Wide Web. RFC 1630

formally defined the term "URI" as a generic term best suited to the

concept.

Unique Street Reference Number (**USRN**)

Universal Description, Discovery, and Integration (**UDDI**)

Web Services Description Language (**WSDL**)

A unique identifier for a street as defined in BS7666.

An XML-based registry for businesses worldwide to list themselves on the Internet. Its ultimate goal is to streamline online transactions by enabling companies to find one another on the Web and make their systems interoperable for e-commerce.

An XML-based language used to describe the services a business offers and to provide a way for individuals and other businesses to access those services electronically.

Works Data Alteration Notification used to describe changes that need to be made to works data transmitted in previous notifications

Works Stop Notification used in EToN to indicate that the promoter is no longer occupying the highway. Serves the purposes of both the Works Clear

and Works Closed notice described in the legislation.

World Wide Web Consortium (**W3C**)

W3C is an international consortium where member organisations, a full time staff, and the public work together to develop Web standards. W3C has published more than ninety such standards, called W3C Recommendations. By publishing open (non-proprietary) standards for Web languages and protocols, W3C seeks to avoid market fragmentation and thus Web fragmentation.

XML Schema Definition (**XSD**) XSD, a Recommendation of the World Wide Web Consortium (W3C), specifies how to formally describe the elements in an Extensible Markup

Language (XML) document. This description can be used to verify that

each item of content in a document adheres to the description of the

element in which the content is to be placed.

XML Signature XML Signature defines the syntax and processing rules for creating digital signatures on XML content. It is a joint effort between the World

Wide Web Consortium (W3C) and Internet Engineering Task Force

(IETF).

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**1.INTRODUCTION**

**1.1General**

This document provides a technical specification for a new EToN (Electronic Transfer of Notifications) system, to be known as the Technical Specification for the Electronic Transfer of Notifications - Version 5, aimed primarily at software developers. It is intended as a standalone document that replaces the related technical appendices in the previous *Code of Practice for the Co-ordination of Street Works and Works for Road Purposes and Related Matters*. This document also replaces the Electronic Transfer of Notices Technical Specification published in October 2007. Later revisions of this document will replace Appendix E of the existing Inspections Code of Practice.

This specification should be read in conjunction with the following:

• The Street Works (Registers, Notices, Directions and Designations) (England) Regulations 2007;

• The Street Works (Fixed Penalty) (England) Regulations 2007;

• The Street Works (Charges for Unreasonably Prolonged Occupation of the Highway) (England) Regulations 2008;

• Code of Practice for the Co-ordination of Street Works and Works for Road Purposes and Related Matters 2007.

• Traffic Management Permit Scheme (England) Regulations 2007

• Statutory Guidance for Permits

• Code of Practice for Permits

This specification provides additional explanation and detail that should also be helpful to end users and others.

EToN exchange in accordance with this version of the Technical Specification should begin from 1 April 2009. The main change relates to data exchange of local street gazetteers (LSG) with the National Street Gazetteer (NSG) hub to comply with the distribution of BS7666:2006 level 3 data from 1st April 2009 using the DFT 7.1 transfer format. Gazetteers must be created in accordance with the Data Transfer Format document (DFT 7.1) and should follow the guidance given in the NSG Data Entry Conventions document (DEC-NSG); both are available from the NSG Custodian. As a transitional measure the legacy format of the gazetteers will also be available from the NSG website until 31 March 2010. This should enable users of gazetteers to migrate to the DFT 7.1 format at the optimum time for them.

In order to retain readability within the document, whilst accommodating the requirements for both notices and permits, the word “notifications” (except where otherwise qualified) should be interpreted to mean the transactions that are used throughout the life-cycle of both Street Works Noticing and Street Works Permits regimes.

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**1.2Purpose**

This technical specification and associated XML schemas (discussed below) are intended to allow the development of NRSWA-compliant, interoperable notice management systems (NMS) and related gazetteer management systems (GMS) by commercial EToN software developers, in-house developers and others. This document is also concerned with interoperability of business processes and procedures involving many separate and diverse organisations. System interoperability is to be achieved by compliance with specified protocols as indicated in Figure 1.1.

OD/AOI data exchange format

NSG/ASD data exchange format

Business rules

NSG Hub

NMS and

Web service Web service NMS and

**User A User B**

GMS

Data standards Data validation rules

GMS

System A System B

XML web service schema

XML data schemas

Transaction definitions Timing rules

Sequence rules

Other business rules

Performance requirements Firewall rules

**Figure 1.1 EToN 5 system interoperability**

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This document aims to provide a clear and comprehensive specification to ensure correct and consistent interpretation. It should be read in conjunction with the Regulations and Codes of Practice and other relevant documents to ensure that all statutory, policy and other technical requirements are met.

XML schemas have been developed for notifications based on the EToN protocols defined in this technical specification. The schemas will comply with all relevant e-Government XML standards and will be approved for use across government. The XML schemas will be published on the GovTalk website and can be accessed at the following location:

http://www.govtalk.gov.uk/schemasstandards/schemalibrary.asp

Information on the status of the schemas and the expected publication date will initially be provided on the GovTalk website.

The specification and schemas will be revised in future to include additional and modified requirements as implementation of the TMA progresses and other aspects of the legislation are developed.

Note that this document does not provide a complete specification for notice management systems and street works registers. One vendor may choose to include an item because the vendor feels that it enhances the product while another vendor may omit the same item. An implementation which does not include a particular option must be prepared to interoperate with another implementation which does include the option, though perhaps with reduced functionality. In the same way an implementation which does include a particular option must be prepared to interoperate with another implementation which does not include the option (except, of course, for the feature the option provides). However, both the schema and the associated noticing rules enforce statutory requirements, and it is the responsibility of all to ensure that the minimum mandatory requirements for noticing are met.

**1.3Change management**

The development and implementation of new, interoperable EToN web-based systems is a complex, national information systems IT project involving many different software vendors, user organisations and other interested parties. This Technical Specification will therefore remain a ‘living’ document during the initial development, testing and commissioning stages (and beyond).

A formal change management process has been established to support the development of EToN. This will involve the following:

• Registration of software developers and others.

• Formal submission of change requests, e.g. reporting mistakes, omissions, ambiguous requirements, need for additional rules etc. Logging of all change requests and issues.

• Classification and authorisation of changes.

• Change development – prioritise and resolve following consultation with stakeholders, including software developers.

• Release management - distribution of errata and/or revised sections or full document as appropriate to all registered parties.

• Ongoing review.

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**It is important that all software developers and system suppliers register**.

All registrations and change requests should be submitted to DfT via e-mail at streetworks.eton@dft.gsi.gov.uk.

**1.4Content**

The technical specification consists of 10 sections (including this section). The remaining sections are as follows:

Section 2 describes the overall scope of EToN and in particular defines the scope of the implementation version 5.

Section 3 describes the overall notification requirements, including all core statutory and non statutory notifications, and the new concepts and features to be supported by EToN including submission of forward planning information, Works Data Alteration, voluntary cancellation of works and notifications, exchange of works comments, attachments to notifications, delivery of FPNs and others.

Section 4 provides a basic data model for EToN 5 to meet the overall requirements identified in the previous sections, and includes detailed definitions of all associated data, highlighting the key attributes used for referencing.

Section 5 specifies the content and structure of each EToN 5 notification to meet the notification requirements identified in section 3, based on the underlying data definitions in section 4.

Section 6 defines the rules for determining which organisations can send and receive particular notifications, and the methods of deriving the necessary address data.

Section 7 specifies the required operation of XML web services to support the transfer of notifications and other transactions defined in section 5, including related performance and security requirements.

Section 8 specifies timing and sequencing rules for EToN notifications, including illustrative examples.

Section 9 specifies the requirements for ‘paper’ notifications in accordance with sections 4 and 5, to meet statutory requirements.

Section 10 defines the street and other data necessary to support the operation of EToN 5, and specifies the data transfer requirements between street works organisations and the central NSG Hub.

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**1.5Definitions**

The key words "must", "must not", "required", "shall", "shall not", "should", "should not", "recommended", "may", and "optional" used in this document are to be interpreted as follows:

The word “**must**” or the terms "**required**" or "**shall**", mean that the definition is an absolute requirement of the specification.

The phrase “**must not**” or "**shall not**" mean that the definition is an absolute prohibition of the specification.

The word “**should**” or the adjective "**recommended**" mean that there may exist valid reasons in particular circumstances to ignore a particular item, but the full implications must be understood and carefully weighed before choosing a different course.

The phrase “**should not**” or "**not recommended**" mean that there may exist valid reasons in particular circumstances when the particular behaviour is acceptable or even useful, but the full implications should be understood and the case carefully weighed before implementing any behaviour described with this label.

The word “**may**” or the adjective "**optional**" mean that an item is truly optional.

Note that “should” is used in relation to the operation of notice management systems and associated input data validation requirements to mean that users are expected to comply with statutory requirements and recommendations in the Code of Practice but it has to be assumed that they will not always do so in practice.

The term notifications covers exchanges of information between promoters and authorities, including notices, permits, directions, restrictions, etc. Where notices is used it refers to the notice regime under NRSWA, as amended by TMA and associated Regulations only. Permits means this is a requirement of permit scheme Regulations made under Part 2 of Traffic Management Act.

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**2. SCOPE OF THE NEW ETON SYSTEM**

**2.1General**

This technical specification spans the waves of secondary legislation for both noticing and permit regimes within the TMA. It will be extended in future to support the remaining TMA provisions as work progresses to develop the necessary secondary legislation and codes of practice (see below).

As in previous EToN systems, the scope includes real-time transfer of notifications and periodic exchange of ‘fixed’ street and organisation data with the central NSG Hub necessary to support the EToN process. Substantial changes are required in both of these areas. In order to reduce the amount of work and timescales involved in the initial implementation, some changes relating to NSG and ASD data will be delayed until a later stage(s).

The resulting scope of EToN 5 is shown in Figure 2.1. This can be viewed as a temporary ‘hybrid’ solution involving parallel operation of both new and existing components.

Upload OD and AOI

Upload

NSG Hub

Upload OD and AOI

Download

LSG and ASD

Download OD and AOI

Notifications

Validated LSG and ASD

Notifications

Promoter

and OA LHA and SA Supporting transactions

Inspections batch

New EToN 4.0 transaction using XML web services

Supporting transactions

Existing transfer mechanism using FTP (some changes to data content and file formats)

Authorities should download and use validated LSG and ASD data (not shown)

**LHA** = local highway authority; **OA** = other (sewer, bridge and transport) authority

**Figure 2.1 Overview of EToN 5 data flows**

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These data flows include:

1. Exchange of notifications between works promoters (statutory undertakers, street works licensees and highway authorities), street authorities (excluding private street managers) and other relevant (sewer, bridge and transport) authorities. Promoters also copy notifications to other interested promoters and authorities. As mentioned in Section 1, notifications implies all the data interchanges necessary for both Street Works Noticing and Street Works Permit regimes.

2. Exchange of inspections data between street authorities and undertakers.

3. Exchange of organisation and operational districts (OD) and area of interest (AOI) data between promoters and authorities.

4. Upload of Local Street Gazetteer (LSG) and Additional Street Data (ASD) data by local highway authorities to the central NSG Hub. Upload of ASD by street authorities where they are not the local highway authority (i.e. the Highways Agency, Transport for London and Network Rail). Upload of Trunk Road Street Gazetteer (TRSG) data by the Highways Agency. Note that LSG and ASD uploads must be supplied in DTF 7.1 format

5. Download of validated NSG and ASD data by all users according to their area of interest. Downloads are provided in DTF 7.1 format and will also be made available in the legacy format described in section 10 until 31 March 2010.

The new and existing components are summarised in Table 2.1

**Table 2.1 Scope of EToN 5**

| **Flow** | **Status** | **Transfer method** | **Applicable standard** |
| --- | --- | --- | --- |
| Notifications  (notices and  directions, permit applications,  restrictions etc.) | New | XML web services | This document |
| Attachments to  notifications | New | Indirectly via a web server | This document |
| Direct exchange of OD and AOI data via EToN | New | XML web service | This document |
| Upload and  download OD and AOI data to/from  Hub | Modified OD and  AOI content | Transfer files in  XML format via  existing website  using FTP | This document |
| Inspections data | Existing EToN 3  format | Transfer batch text files using FTP | Appendix E of the Code of Practice for Inspections - Second Edition 2002 |
| LSG and ASD  upload | New | Transfer CSV batch files via existing  website using FTP | DTF 7.1 and the DEC-NSG (BS7666-1: 2006) |
| NSG and ASD  download | New.  Existing EToN 3  format with some minor changes to data content  available until 31  March 2010 | Transfer CSV batch files via existing  website using FTP | DTF 7.1 and the DEC-NSG (BS7666-1: 2006)  This document for legacy download format |

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This specification should be read in conjunction with the Appendix E of the Code of Practice for Inspections - Second Edition 2002.

**2.2Scope of EToN 5**

The scope of information exchange within EToN is wider than hitherto. The main changes include the following:

• Statutory and non-statutory notifications and responses for Street Works Noticing regimes.

• Statutory and non-statutory notifications and responses for Street Works Permit regimes.

• Notification of all registerable road works by highway authorities using exactly the same process as undertakers.

• Cancellation of works and particular notifications, and Works Data Alteration. • Facility to send FPNs, if required.

• Exchange of textual comments linked to works by any interested party. • Submission of forward planning information for Major works, and subsequent updating.

• Improved support for delivery of notifications to other undertakers and authorities, and for copying notifications and responses to interested parties.

• Use of NSG Level 3 data.

• Sending of attachments with notifications (e.g. digital photographs of reinstatements). • Notice of intention to issue a street works licence (s50).

• Unattributable works notice/response notice.

Notice and gazetteer management systems for use in Wales **must** recognise the bi-lingual nature of the underlying NSG/ASD data and allow the Welsh language to be fully and correctly represented in notifications (see requirements for character encoding in sections 4.6 and 10.5).

The following areas are **not included** in EToN 5:

• Notices of proposed designations, and responses.

• Undertakers obtaining consent to carry out works during a restriction. Note: The appropriate agreements defined in 4.7.4 should still be recorded in notifications.

• Undertakers obtaining consent from a street authority for placing apparatus in a protected street (s61). The appropriate agreements defined in 4.7.4 should still be recorded in notifications.

• Undertakers submitting plans and sections and obtaining SED approval.

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• Sending of s85 diversionary works notices by street authorities (any subsequent works carried out in response will be notified in the normal way using EToN).

• Applications for s50 licences.

• Full support for notices in relation to s81 (duty to maintain apparatus).

• Providing access to EToN for private street managers, s50 licensees, bridge and transport authorities and others, e.g. access to EToN web services via an EToN website using a standard web browser interface.

• Notifications related to non-works activities, e.g. licences for skips and scaffolding, traffic orders for special events etc.

• Access to local or central registers for planning purposes.

• Transfer of NSG/ASD data on a change-only basis.

• A mechanism to allow undertakers and other interested parties to express interest in particular streets (to complement AOI).

• Full implementation of XML web services, in particular secondary validation of notification data (in addition to ‘front-line’ XML schema validation) and error reporting.

• Including attachments within XML messages.

It is intended that some of the above areas will be addressed as part of future revisions of EToN, the revised Code of Practice for inspections and other TMA provisions. In the meantime, paper notifications or other ‘off-line’ methods should be used where required.

The above NSG-related changes (and other areas) will be implemented in a future revision(s) of EToN.

The scope may also be extended in future to include access to information held on registers in order to assist works promoters in planning and co-ordinating works (i.e. before submitting a notification). Note that the existing Street events Data Exchange Protocol (SDEP) XML web service is designed to provide only limited summary street works information to the public.

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**3.GENERAL NOTIFICATION REQUIREMENTS**

**3.1General**

This section defines the overall requirements for communications between stakeholders. The resulting EToN protocol is described in later sections.

The term “notification” is used hereafter in a generic sense to include all NRSWA and Permit related EToN transactions.

The main NRSWA provisions, as amended by the TMA, to be supported by EToN 5 are as follows:

1. Sending of statutory and non-statutory works-related notices by undertakers.

2. Registration of highway works by highway authorities using the same notification process as (1).

3. Sending of directions and other statutory and non-statutory notices by street authorities in relation to (1).

4. Sending of directions and other statutory and non-statutory notices by street authorities in relation to s58 and s58A restrictions.

5. Sending of other statutory and non-statutory notices by street authorities and relevant authorities.

6. Delivery of Fixed Penalty Notices (FPNs) to undertakers.

The additional provisions for permitting are summarised as follows:

1. Applications for Provisional Advanced Authorisations (PAAs) and Permits by promoters 2. Applications for Permit Variations by Promoters

3. The Granting, Refusal and Revoking of Permits by permit authorities

As previously, the underlying requirements also relate to the emergency procedures of other organisations, inspection and charging regimes, records for reinstatement guarantee purposes, and confirming who has worked at a particular location.

This section also describes additional notification types and other features relating to forward planning information, works and notification cancellation, Works Data Alteration, attachments and comments that will be used in conjunction with the above NRSWA and Permit notifications. The overall aim is to provide better information to help improve co-ordination.

**3.2Determination of the appropriate notification regime**

With the introduction of Permit Schemes systems will need to be able to define if a particular Works is subject to the existing NRSWA Noticing rules or a Permit Scheme. For those Authorities implementing a Permit Scheme it will be necessary for them to define a specific District as the permit Authority. This District will be identified as a Permit Authority through its

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OD File (DistrictFunction = 9). All streets that are subject to the Permit Scheme will then have their NSG Additional Street Data record specifying the Permit Authority as the SWA\_ORG\_REF\_AUTHORITY and DISTRICT\_REF\_AUTHORITY.

In the case of a joint Permit Scheme it is possible that an Authority’s NSG will have a different Authority specified in their Additional Street Data record as the SWA\_ORG\_REF\_AUTHORITY.

It is likely that the OD information for a Permit Authority will be made available before the permit scheme itself becomes active. In this case NRSWA notices should continue to be sent to the primary notice authority for the street until the permit scheme goes live. Note that, as for notice transition from EToN 3 to EToN 4, works phases that started life under one regime should continue under that regime until the Actual Stop / Registration of that phase **provided that** the date on which the activity is planned to start on site is not more than one month (for standard, minor and immediate activities) or three months (for major activities) after the regime changeover date. A works phase with a proposed start that falls after this date should be cancelled, and a New Activity notice submitted under the new regime in accordance with the rules detailed within this specification

The DfT will provide information on the go-live dates, fees and other information relating to each permit scheme and users will need to ensure that this information is incorporated into their systems in a timely fashion. A mechanism for the electronic exchange this Permit Scheme metadata may be considered in a future version of this technical specification.

**3.3Submission of notifications by highway authorities**

Under NRSWA, EToN systems must allow highway authorities to notify all registerable road works activities using the same process as statutory undertakers. This involves the same notification types as undertakers (defined later). There are no statutory responses from street authorities to these notifications (from highway authorities), although the works comments facility (see below) can be used if required to respond to a notification and provide a record. Cancellations and Works Data Alterations will also apply to submission of notifications by highway authorities.

Separate operational districts should be defined (see section 4.7.15) in order to separate the works promoter (works department) and street authority (traffic manager) functions within local highway authorities.

Note that under a Permit regime highway authorities must apply for PAAs and Permits in exactly the same way as statutory undertakers.

**3.4Works categories**

All planned works are classified by the duration of the works as shown in the following table. Immediate (Emergency and Urgent) works can be of any duration. The durations are in working days (see definition in section 8).

These categories apply to street works and are also used for registering road works.

| **Category** | **Duration (days)** |
| --- | --- |
| Major | >10 |
| Standard | 4-10 |
| Minor | <4 |

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Planned works can also be classified as Major works if any of the following criteria are met, irrespective of duration:

1. Works that are identified in an undertaker’s annual operating programme or are normally planned or known about at least six months in advance of the proposed start date.

2. Any works that are subject to an order under s14 of the Road Traffic Regulations Act 1984.

The following rules also apply to undertakers:

1. Planned interim to permanent reinstatement works cannot be classified as Immediate. 2. Remedial works cannot be classified as Urgent.

Notice management systems should apply the above rules to ensure that, as far as possible, the correct works category is always identified when creating a notification.

**3.5Summary of notification requirements**

The new regime requires more formal notifications and information exchange via EToN to enable improved management and co-ordination of street and road works. A list of the resulting notifications (i.e. within the scope of EToN 5) is provided in Table 3.1, including both statutory and non-statutory requirements as indicated.

The Originator column indicates which type of organisation may send this type of notification: **P** = promoter (undertaker or highway authority), **R** = relevant authority, **A** = street / permit authority, **U** = undertaker. Submission of NRSWA notices by highway authorities is not a statutory requirement (see section 1.1).

Explanations of how the EToN notifications support the corresponding NRSWA / Permit requirements are provided where appropriate in the transaction definitions in section 5.

Note that in the remainder of this document the notification name is used rather than NRSWA section number. This is also to emphasise that particular works notifications apply to all works promoters, i.e. undertakers and highway authorities.

**Table 3.1 List of Notification requirements**

| **Applic**  **ability** | **NRSWA Section No. or CoP requirement. Permits CoP or Regulatory requirement** | **Statutory** | **EToN notification name** | **Originator** |
| --- | --- | --- | --- | --- |
| Both | Forward planning information | N | Forward Planning Information | P |
| Notices | S54(1) advance notice of Major works | **Y** | Initial Notice | P |
| Notices | S55(1) notice of starting date of works (Standard, Minor and Urgent works) incl. planned remedial works | **Y** |
| Notices | S57 Notice of Emergency works (incl. remedial) | **Y** |
| Notices | S58A Schedule 3A 2(1)(d) notice of starting date of works in response to notice of proposed restriction | **Y** |
| Notices | S55(1) notice of starting date of works under s58 and Regulation 9(3) in response to notice of proposed restriction | **Y** |
| Permits | Provisional Advanced Authorisation Applications. Reg. 10, 11, 14, 30(1), 33 | **Y** | PAA (Major) / Permit Application (Non major) | P |
| Permits | Permit Applications: Reg. 11, 33 |

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| **Applic**  **ability** | **NRSWA Section No. or CoP requirement. Permits CoP or Regulatory requirement** | **Statutory** | **EToN notification name** | **Originator** |
| --- | --- | --- | --- | --- |
| Notices | S55(1) Notice of starting date of works (Major) | **Y** | Confirmation Notice | P |
| Permits | Variations Initiated by the Activity Promoter. Reg. 15 | Y | Variation Application | P |
| Y | Duration Variation Application (Works in Progress) | P |
| Works Data Variation (Works in  Progress) | P |
| Both | S74 / S74A notice of Actual Start Date | **Y** | Actual Start Date | P |
| Notices | S74(3) and (4) Revised duration estimate | **Y** | Revised Duration Estimate | P |
| Notices | S74(4) In-progress revised duration estimate | **Y** |
| Both | S74(5C) / S74A Works Clear | **Y** | Works Stop | P |
| Both | S74(5C) / S74A Works Closed | **Y** |
| Both | S70(3) / S70(4A) Completion of reinstatement (interim and permanent) | **Y** | Partial Registration | P |
| Full Registration | P |
| Bar Hole Registration | U |
| Both | Voluntary cancellation of works/phase | N | Cancellation | P/  A |
| Notices | S54(4A) confirmation of non-issue of S55(1) notice | **Y** |
| Notices | S55(8) confirmation of works not starting | **Y** |
| Both | Notice cancelling S58 proposed restriction | N |
| Both | Notice cancelling S58A proposed restriction | N |
| Both | Notice revoking s58A Schedule 3A 4 restriction | **Y** |
| Permits | Cancelling a Permit. Reg. 15(3) | Y |
| Both | Reversion of Actual Start Date notice | N | Revert Actual Start | P |
| Both | Reversion of Works Clear/Closed notice | N | Revert Works Stop | P |
| Both | Error Correction | N | Error Correction (Work in Progress) | P |
| Both | S74(3) and (4) Duration estimate challenge | **Y** | Duration Challenge | A |
| Both | S74(3) and (4) In-progress revised duration estimate challenge | Y |
| Both | S74 Duration estimate challenge non-acceptance | N | Duration Challenge Non-acceptance | P |
| Both | S74 In-progress revised duration estimate challenge non-acceptance | N |
| Both | Informal overrun warning | N | Informal Overrun Warning | A |
| Notices | S56(1) Direction as to timing of street works (proposed) | **Y** | Directions on Timing | A |
| Notices | S56(1A) Direction as to timing of street works (subsisting) | **Y** |
| Notices | S58A Schedule 3A 3 Direction on starting date | **Y** |
| Notices | Cancellation of directions | N |
| Notices | S56A Direction as to location of new apparatus | **Y** | Direction on Placing Apparatus | A |
| Notices | S56A Notice revoking s56A direction | **Y** |
| Notices | S66(3) notice to discontinue or mitigate a delay or obstruction | **Y** | Undue Delay | A |
| Permits | Grant Provisional Advanced Authorisation. Reg. 16 | Y | Grant PAA | A |
| Permits | Grant Permit: Reg. 16 | Y | Grant Permit | A |
| Permits | Grant Permit Variation: Reg. 15 | Y | Grant Permit Variation | A |
| Permits | Provisional Advanced Authorisation Refusal: Reg. 16 | Y | Refuse Permit / PAA / Variation | A |
| Permits | Permit Refusal. Reg. 16 |
| Permits | Variation Refusal. Reg. 15 |
| Permits | Revoking a Permit. Reg. 15(3) | Y | Revoke Permit (Proposed Works) | A |
| Permits | Variations Initiated by the Permit Authority: Reg. 15 | Y | Authority Imposed Variation | A |
| Both | S58(1) notice of proposed restriction on street works following substantial road works | **Y** | Proposed Restriction (Road Works) | A |
| Both | S58 Notice stating that substantial road works have been completed and a s58 restriction is in force | N | Restriction In Force (Road Works) | A |
| Both | S58A Schedule 3A 2 Notice of proposed restriction on works following substantial street works | **Y** | Proposed Restriction (Street Works) | A |
| Both | S58A Schedule 3A 4 Direction restricting further works | **Y** | Restriction in Force (Street Works) | A |

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| **Applic**  **ability** | **NRSWA Section No. or CoP requirement. Permits CoP or Regulatory requirement** | **Statutory** | **EToN notification name** | **Originator** |
| --- | --- | --- | --- | --- |
| Both | S50 and Schedule 3 notice of intention to issue a street works licence | **Y** | Intention to Issue a Street Works Licence | A |
| Both | S81(6) Inspection or remedial works to defective apparatus (in conjunction with Inspections) | **Y** | Unattributable Works | R/  A |
| Unattributable Works Response - Acceptance | P |
| Unattributable Works Response – Non Acceptance | P |
| Both | S95A and schedules 4A and 4B Fixed Penalty Notice | **Y** | Fixed Penalty Notice | A |
| Both | S95A and schedules 4A and 4B notice withdrawing the Fixed Penalty Notice | **Y** | Fixed Penalty Notice Withdrawal | A |
| Both | FPN Comments | N | FPN Comments | P/  A |
| Both | Works Comments | N | Works Comments | P/  R/  A |

Note: Whilst this table may reflect the legal requirements, it does not define the minimum requirements for systems to work. It should not be used as the only basis for determining electronic notification requirements, validation and sequencing rules.

**3.6Variation and revocation of directions and restrictions**

NRSWA provides limited powers for varying or revoking directions as indicated in Table 3.1 and as summarised in the following table.

**Table 3.2 Directions and restrictions that can be amended**

| **Direction, restriction or notice** | **Vary** | **Revoke** | **Comments** |
| --- | --- | --- | --- |
| S56 direction on  timing - proposed  works | N | N | Only one direction is allowed per works phase except in the case of Major works where a direction can be given in response to the initial notice and a further direction can be given in response to the confirmation notice if circumstances have changed significantly. An authority may subsequently issue a s56(1A) direction to change the times if necessary. |
| S56(1A) direction on timing - subsisting  works | N | N | Can only be given once works have started (and possibly before the notice of Immediate works or actual start date has been received) and the impact of the works is greater than was anticipated at the time that the initial notice was considered by the authority, or the circumstances have changed. |
| S56A direction on  location of new  apparatus | **Y** | **Y** | A direction may have to be revoked if an undertaker is unable to locate new apparatus in a different street. A s56A direction can be varied, e.g. if it relates to a specific part of a street. |
| S66 | N | N | A notice requiring an undertaker to take steps as specified in the notice to mitigate or discontinue the obstruction. |
| S58 restriction  following substantial road works | N | N | An authority has the power to direct the timing and order of execution of street works by the use of s56 and s56(1A) directions. However, different timing rules apply in this situation as the authority may not wish to direct works to start until it knows that the previous works will finish in time (see section 8). |
| S58A Schedule 3A 3 works direction | N | N | S58A includes powers to direct. In practice this operates in the same way as s58 above. |

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| S58A Schedule 3A 4 restriction in force  following substantial street works | N | **Y** | A restriction may be revoked at any time. There are no powers to vary a restriction under s58A. |
| --- | --- | --- | --- |

However, note that EToN will allow an authority to amend any directions and restrictions if they were sent by mistake or contained errors (see section 3.11). This is done by re-sending the previous transaction in its entirety with modified contents (including the possibility of no contents to withdraw a Direction). Developers may wish to provide appropriate safeguards to help ensure that directions and restrictions which cannot be legally varied are only resent for correction purposes.

**3.7Processes for restrictions under s58 and s58A**

The processes for restrictions following substantial road works (s58) and substantial street works (s58A) are very similar:

1. Where a street authority wishes to impose a restriction following road works or street works, the street authority should serve a Proposed Restriction (Road Works / Street Works) notice. This should formalise discussions that have already taken place at co ordination meetings etc.

2. If an undertaker had planned to carry out works before or during a proposed restriction period then they should contact the street authority and submit notices / permit applications as appropriate.

3. It is recommended that the street authority should send a further notice of proposed restriction with revised dates if the timing has changed significantly as a result of (2). The street authority may extend the deadline for submissions from undertakers (and highway authorities in the case of s58A) if appropriate.

4. Under NRSWA, in the case of s58, the street authority **may** give directions on timing (Directions on Timing notification) in relation to each works notified in response to the notice of proposed restriction. In the case of s58A, the street authority **should** give directions on starting date (Directions on Timing notification) in relation to each works. Under Permits the permit authority would agree appropriate dates with the promoter prior to granting the permit.

5. When the street authority wishes to commence the restriction, it should serve a Restriction in Force (Road Works / Street Works) notice. In the case of s58, this is a non statutory ‘reminder’ notice issued following completion of the substantial road works. In the case of s58A, it is a statutory requirement that a direction restricting further works must be given before the last works has been completed.

Timing rules related to the above are defined in section 8.

Where a street authority’s consent is required to carry out works during a restriction (i.e. if not covered by standard exemptions) then this should be done offline, e.g. by letter following an initial telephone call. Once consent is granted then the New Activity notification should be submitted in the usual way via EToN.

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**3.8Basic relationships between streets, works and notifications**

A number of basic rules underpin the new notification regime as described in the Code of Practice:

1. A notification can only apply to works in one street (i.e. a single USRN as defined in the NSG). Each works reference must be unique to a particular USRN. If a works extends over separate parts of a street that have different street authorities then the works in each part of the street must be separately notified to the respective street authority using different works references.

2. Where a works could be considered to belong to more than one street (e.g. junction of a cross roads) then the notification should use the street with the highest road category. Separate notifications may be required for both streets if the works encroaches on the second street.

3. A street or road works project can involve related works in two or more different streets. This also applies to street works that are severed from Immediate works. Where a project involves related works in two or more streets then all New Activity notifications should contain a common project reference. A brief project description should also be provided.

4. Works in any street may involve one or more phases carried out at one or more sites. Separate notifications are required for each works phase and all notifications must use the same works reference.

5. Remedial works to defective interim or permanent reinstatements are treated as a new works phase and normal notification requirements apply. Notifications should use the same works reference as the original parent works; a new works reference number should only be used if the original reference cannot be identified. The subsequent registration notice will confirm whether the resulting reinstatement is interim or permanent.

The works comments facility (see section 3.10) will allow ad-hoc exchange of textual supporting information linked to the overall works.

The relationship between streets, works and phases is illustrated in Figure 3.1.

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**Project or severed works**

**Works in street 1** Works in Street 2

Works in street n

**Phase 1**

**Site 1** Site 2 Site n

Phase 2

Site 1 Site 2 Site n

Phase n

Site 1 Site 2 Site n

**Figure 3.1 Relationship between streets, works and phases**

**3.9Forward planning information**

Forward planning information for Major works may be submitted via EToN and held on local and central registers to facilitate longer-term planning and co-ordination. The use of EToN will ensure consistency, allowing use of common NSG/ASD data, and use of a common mechanism for sharing of information with interested parties as required (as for cross-noticing) and for providing data into registers. The use of EToN will also help ensure data integrity through the use of extensive automatic validation checking. However, forward planning information does not have to be submitted via EToN.

Whilst forward planning information will be part of EToN, it will be handled separately from the statutory notification and road works registration requirements. In particular, sending of forward planning information would not attract legal proceedings under any circumstances. In general it will be helpful to provide such information, even if incomplete and uncertain, as soon as possible to assist long-term planning and co-ordination, and promoters will be encouraged keep the information continually updated. This will be facilitated by the use of notification sequence number and date data items (see below) which are also required for statutory notifications.

Where a proposed project involves work in more than one street then forward planning information should be submitted separately for each street (as for statutory notifications). The use of a common project reference will allow the information to be related.

Forward planning information can be submitted at any time prior to submitting the New Activity notification. Submission of forward planning information should be prevented (with appropriate warning messages etc.) if any other type of notification exists for the same works reference (i.e. if the New Activity notification has been sent).

Forward planning information can also be cancelled using the same works cancellation mechanism as used for statutory notifications.

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Automatic data validation should be limited accordingly. There is no mandatory requirement to maintain an audit trail as for statutory notifications.

**3.10EToN messaging**

This refers to the requirement for a separate messaging facility within EToN, analogous to e mail or a simple discussion forum, but linked to individual works. The aim is to support improved communications between works promoters and authorities without the constraints and problems of using free text within notifications, or using separate e-mail etc. In particular, this will:

• Ensure compatibility between sending and receiving organisations.

• Allow works comments to be sent to all organisations to which the original notifications were sent (at the discretion of the sender).

• Avoid the risk of losing or forgetting e-mails etc.

Messaging will be implemented as a Comments notification. There are two separate notification types:

• Works Comments (not to be confused with works comments in EToN 3). • FPN Comments.

The works comments facility will be used primarily for communication between works promoters and street authorities, both to support information exchange and to provide an electronic record and audit trail linked to the works. The facility could also be used by other interested undertakers and authorities to register concerns etc. Examples include:

• Where a street authority requires additional information from a works promoter in order to assess the impact of the works and mitigating measures, e.g. further details of projects involving works in several streets, or proposals for working outside normal working hours etc.

• To record the outcome of meetings or telephone discussions, e.g. concerning alternative ways of carrying out the works, agreed early starts or extensions or impact of proposed restrictions etc.

Works comments will relate to an individual works (common works reference) and can be read in conjunction with any associated works notification. It will be possible to submit works comments at any time during the works life cycle and comments will be copied to interested parties in the same way as normal notifications. Works comments can also be used in conjunction with forward planning information (e.g. opportunities for collaborative working).

FPN comments will work in a similar manner but used to support private dialogue between a street authority and a works promoter, optionally linked to a specific FPN.

Comments will not be recorded in the statutory register and will not be visible to the general public.

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**3.11Notification data change management**

**3.11.1General**

The underlying requirement is to facilitate improved co-ordination and also ensure that information recorded in street works registers and other related public-access databases (e.g. Elgin) is always as complete, accurate and up-to-date as possible.

EToN 5 provides the following mechanisms to allow changes to notification data: 1. Cancellation of a works/phase, i.e. before occupation of the street.

2. A specially controlled Works Status Correction for Actual Start and Works Stop notifications if sent by mistake or with incorrect data.

3. Opportunity to correct or update values of particular non-critical data elements (defined later) in successive works notifications.

4. Use of a separate Works Data Alteration transaction to amend values of particular works data elements at any time.

5. Resending of particular street authority notifications to replace or amend (update or correct) data sent in previous notifications.

For works promoters the agreement of the street authority should be obtained before sending a Works Data Alteration or Works Status Correction notification (Note: In some cases agreements must be provided. Refer to section 5 for the technical rules on including agreement elements in the various transactions). This is because such changes could have potentially significant consequences for co-ordination or s74 charging etc. The requirements relating to cancellation and corrections are expanded below and illustrated in the state transition diagram in Figure 3.2.

The corresponding EToN transactions are defined fully in section 5. Notice management systems should provide automatic data validation and interlocks to ensure that, as far as possible, the correct notifications containing the correct information are sent in the correct sequence (see section 8). The need for the use of cancellation and correction to recover from mistakes should therefore be limited.

This approach also aims to simplify the associated automatic data validation and related technical implementation requirements.

**3.11.2Works Data Alteration**

Works Data Alteration only applies to promoter notifications. Works Data Alteration is not used by street authorities; instead, authorities can resend particular notices, directions and restrictions to correct a previous notification on a complete replacement basis.

Works Data Alteration does not apply to forward planning information which can be re submitted or updated at any time. Similarly, corrections to registrations are handled simply by sending a further registration notice which provides the latest information for the affected site(s).

Corrections can only apply to current data for an active works/phase and therefore there is no need to identify the specific notification to be corrected. Correctable data items and types, and

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the rules for determining which items can be changed at each stage in the notification sequence are defined in section 5.2.11.

In the case of non-critical items where changes will not have any significant consequences, new or missing values can be provided in subsequent notifications without the prior agreement of the street authority. Changes to timing of Major works can be notified in the Activity Confirmation transaction.

Corrections to dates in Actual Start Date and Works Stop notifications are not permitted. In the event of errors being discovered, e.g. notification sent by mistake, then the last notification should be reverted and a new notification submitted at the correct time.

Works Data Alteration data must be stored and managed in addition to the original notification data to provide a complete historical record and audit trail for the works/notification life cycle. New values provided in Works Data Alteration notifications or other notifications must not overwrite existing data provided in previous notification(s). A full audit trail must similarly be provided for all replacement notifications sent by authorities.

**3.11.3Works Status Correction**

This facility applies to promoters only. It is a non-statutory process that can only be invoked following agreement with the street authority. It is emphasised that works promoters should operate quality control systems that minimise the possibility of notifications being sent by mistake, and it is therefore expected this facility will be used on a very infrequent basis.

A Works Status Correction is used to revert the preceding Actual Start or Works Stop notification (a new notification may follow) as distinct from cancellation of a works/phase. The works will revert to the state that existed immediately prior to the reverted notification being sent (see section 3.11.3) and will proceed from that point using the same work reference.

Note: A reversion of state, where this is valid (see rules in 5.2.10), does not undo notifications that have been sent subsequent to the notification that is being reverted. For example, if a registration is sent subsequent to a Works Stop and the Works Stop is reverted then the registration is still valid.

**3.11.4Cancellation of proposed works/phase or restriction**

This refers to cancellation of a previously notified proposed restriction or a works/phase before work has actually started. A works that has already started cannot be cancelled. A cancellation may be used where a planned activity is not going to take place, an New Activity notification was sent by mistake or where the notification contains fundamental mistakes (e.g. wrong street authority) and it is necessary/easier to start again.

In the case of voluntary cancellation of a works/phase, the notification should be sent as soon as possible to assist co-ordination. However, statutory cancellation notifications are still required and these should only be sent at prescribed times (see section 8).

A cancellation notification can also be used to cancel potential works notified in forward planning information.

In the case of a New Activity on a new works reference (i.e. the first phase), the term “cancellation” is used to mean either permanently cancelled (i.e. planning not to proceed) or postponed (planning to re-schedule for a later date) for any reason, e.g. unforeseen site problems or adverse weather conditions etc.

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If the first phase of a works is cancelled then the works reference must not be reused.

Cancelled works should be clearly identified as such on the statutory register; no data should be deleted.

Cancellation of a works should also automatically cancel any related street authority responses, e.g. duration challenge or direction.

The cancellation transaction is not used for directions. Instead, authorities can resend a Directions transaction with no direction times or other details (i.e. with relevant elements supplied containing a null value), again on a complete replacement basis.

**3.12Fixed Penalty Notices**

This refers to a facility for transmission of FPNs and notices withdrawing FPNs via EToN.

The FPN regulations apply to statutory undertakers only. However, systems must also allow street authorities to send ‘shadow’ FPNs to highway authority promoters in order to demonstrate parity of treatment with undertakers.

It should be noted that the provision of this facility does not mean that undertakers have to use it. However, authorities must use EToN if an undertaker wishes to receive FPNs by this method. Details of delivery options for FPNs are provided in promoters’ Operational Districts (OD) data (see section 4.7.15).

The associated XML web services transaction (see section 7) will provide the necessary delivery confirmation and time stamping for audit trail. FPNs will relate to a particular works and will be sent to the works promoter or agent (where pre-arranged) for the district number concerned. The web service URL will be specified separately in the OD data (see section 5.2.23) allowing an undertaker to use a different return path for receiving FPNs via EToN if required.

Only the variable data (e.g. FPN number, offence type etc.) is to be transmitted via EToN. Notice management systems for use by undertakers must automatically combine the data in the XML message and fixed data from the sending authority’s OD data (e.g. details for representations and payment) in order to ‘reconstitute’ the FPN.

Sending and receiving systems must provide the necessary functionality for re-producing FPNs as legal documents as prescribed in the regulations and Codes of Practice, i.e. by holding templates of the forms (see Code of Practice).

Any other related functionality for managing FPNs and payments etc. will be as provided by individual developers.

**3.13State definition**

A works can exist in one of seven different states at any given time within EToN, as defined in Table 3.3. Any works/phase has a life cycle which always includes an initial state and a final state, and may include one or more intermediate states. Particular ‘New Activity’ notifications create the initial states, and other notifications cause transitions to other states as shown in the following table.

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**Table 3.3 State definitions**

| **State name** | **State description** | **Notification that causes a state transition** |
| --- | --- | --- |
| Forward planning | Applies to Major works only. Initial state if optional forward planning information is provided. | Forward Planning Information |
| Advance planning | Advance notification period, applies to Major works only. Can be initial state if no forward planning information exists. | Initial Notice / PAA Application (Major works) |
| Planned work  about to start | Notification of planned works (or Activity confirmation for Major works) has been given but works have not yet started.  Initial state for Standard and Minor works. Cannot be initial state for Major works or Immediate works. | Confirmation Notice (Major works), Initial Notice (Standard or Minor works) or Permit Application |
| Work in progress | Work has started, i.e. actual occupation of the street has occurred. Initial state for Immediate works. Cannot be initial state for any other category of works.  Registration notices can be sent in this state. | Initial Notice / Permit Application (Immediate works) or Actual Start Date for all other works. |
| Work completed (with excavation) | Work has finished and the street returned to normal use. Can only follow ‘work in progress’ state.  Registration notices can be sent in this state. Where works are notified as not requiring excavation and subsequently the activity is found to require excavation then a new, separate notification covering this new activity is required and all the normal noticing rules apply. | Work Stop |
| Work completed (no excavation) | Work has finished and the street returned to normal use. This includes works which did not involve excavation (e.g. inspection works in TS streets) and abandoned works (i.e. works cancelled after the street has been occupied). Can only follow ‘work in progress’ state. | Work Stop |
| Work cancelled | Planned or unplanned work is cancelled (re scheduled or will not proceed) before occupation of the street. Cannot follow work completed states. | Cancellation (voluntary **or** statutory). |

There are basic sequences of allowable state transitions depending on the type of works, i.e. works category. Each basic sequence may involve looping if particular notifications are reverted and resent, and/or branching if a works/phase is cancelled.

Allowable state transitions are illustrated in Figure 3.2 using the following notation:

Works state

Notice can be resent (without a cancellation or withdrawal)

Notice is optional

Notification timing and sequence rules are defined in section 8.

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Immediate New Activity

Minor /Standard or Major (Not Asset Activity)

New Activity

Major (Asset Activity)

Major (Asset Activity)

FPI

Forward

planning

New Activity

Advance

planning

Activity

Confirmation

Planned

work about to start

FPI

New Activity Activity

Confirmation Withdraw

Start

Not Immediate

Immediate only

Actual Start Work in

Progress

Stop

Work

completed

(no ex.) Withdraw

Stop

Registration

Registration

Not phase 1

Work

completed

(with ex.)

Cancel

Phase 1

Work

cancelled

End of Works End of Phase

**Figure 3.2 Works state transition diagram**

End of Works

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The State Transition has separate paths for works with and without excavation. It is not always possible to determine whether works are completed with or without excavation from the charge category.

• Charge Categories 1 and 2 relate to works with excavation, and registrations must be provided.

• Charge Categories 6, 9, 11 and 12 relates to works without excavation or laying of apparatus only and registrations may not be provided.

• Systems should be able to receive, but not require, registrations to be provided for all other Charge Categories.

• The sending of a registration notice for a works classifies the works as “with excavation” and a full registration notice should be supplied at the end of all subsequent phases (except for the scenario where emergency remedial works follows another phase, see below).

The following tables show the additional notifications **within** each works state, for both promoters and street authorities, which are not included in the state transition diagram.

**Table 3.4 Other notifications within each works state**

| **Promoter notification** | **Notifications within state** | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| **Forward**  **planning** | **Advance**  **planning** | **Work**  **about to**  **start** | **Work In**  **progress** | **Work**  **completed** | **Work**  **cancelled** |
| Revised Duration Estimate |  | N | N | NP |  |  |
| Duration Variation Application (In Progress) |  |  |  | P |  |  |
| Duration Challenge Non-acceptance |  | N | N | NP |  |  |
| Error Correction |  | N | N | N | NP |  |
| Works Data Variation |  |  | P | P |  |  |
| Works Comments | NP | NP | NP | NP | NP | NP |
| FPN Comments |  | NP | NP | NP | NP | NP |

| **Primary notice authority**  **notification** | **Notifications within works state** | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| **Forward**  **planning** | **Advance**  **planning** | **Work**  **about to**  **start** | **Work In**  **progress** | **Work**  **completed** | **Work**  **cancelled** |
| Duration Challenge |  | N | N | NP |  |  |
| Direction on Timing |  | N | N | N |  |  |
| Direction on Placing Apparatus |  | N | N |  |  |  |
| Undue Delay |  |  |  | N |  |  |
| Grant PAA |  | P |  |  |  |  |
| Grant Permit / Variation |  |  | P | P |  |  |
| Refuse Permit / PAA |  | P | P | P |  |  |
| Revoke Permit (Proposed Works) |  |  | P |  |  |  |
| Revoke Permit (Works in Progress) |  |  |  | P |  |  |
| Authority Imposed Variation |  |  | P | P |  |  |
| Informal Overrun Warning |  |  |  | NP | NP |  |
| Fixed Penalty Notice / Withdrawal |  | NP | NP | NP | NP | NP |
| FPN Comments |  | NP | NP | NP | NP | NP |
| Works Comments | NP | NP | NP | NP | NP | NP |

Key:

N - Applies to NRSWA

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P - Applies to Permits

Notes

1. Promoters can revise duration estimates in an Activity Confirmation Notification, i.e. revising the estimated end date provided in a New Activity notification.

2. The Revised Duration Estimate must only be used for Works in Progress for Permits to confirm the agreed reasonable period following a duration challenge and subsequent negotiations

3. If a street authority gives a Direction on Placing Apparatus or any form of Permit response which ultimately prevents the works from proceeding then the undertaker must submit a Cancellation notification.

4. There can only be a maximum of one response to an application/variation. If a permit has been refused, that must be followed by a further application/variation before it can be granted. Once a permit is granted it can only be changed by “Revoke Permit” or “Authority Imposed Variation”.

5. Rules relating to giving of directions are defined in Table 3.2.

6. FPNs cannot be issued under Permits for works that have not yet started. However, an FPN can be given up to 91 days after the offence so EToN has to allow these notifications to be sent during these states in a subsequent phase

**3.14Attaching documents to EToN notifications**

The Codes of Practice recommend that drawings, digital photographs and other supporting information should be provided with particular EToN notifications where appropriate. This applies mainly to notifications sent by promoters.

In order to avoid the impact of large file sizes on EToN web services transactions, the transfer of attachments will be achieved indirectly by providing access to files on a web server that may be an FTP, HTTP or HTTPS server. The recipient can then access the files as required when processing the notifications. The related functionality is a matter for individual system developers, e.g. providing hyperlinks to simplify document access, and related data management.

Attachments are optional; any number of URLs may be associated with each relevant notification. The ‘base’ URL (i.e. protocol prefix and domain name) must be pre-defined in the sender’s OD data (see section 4.7.15) and the specific URL suffix must be provided in the individual notifications. Each file will have a single address. A file reference should only be provided once and need not be included on future notifications. If the base URL is subsequently changed then the new value is deemed to apply to all previous attachments.

Attachments referenced in a notification must be accessible online at the URL specified until the end of the warranty period for those works. The attachments may then be archived but must be retrievable using the original URL reference for a period in accordance with the advice given in section 3.6.3 of the Co-ordination Code of Practice.

To help ensure that this mechanism works effectively and efficiently, attachments should only be used where necessary and only the minimum essential information should be included.

Allowable file types are listed below:

| **File type** | **Description** | **File extensions** |
| --- | --- | --- |
| jpeg | Digital photograph | **.jpg .jpeg .jpe** |
| pdf | Document containing pictures, text etc. in Adobe portable document format | **.pdf** |

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| dxf | CAD drawings | **.dxf** |
| --- | --- | --- |
| html | Document containing pictures, text etc | **.htm .html** |

Whilst attachments with any other file extensions are not expressly prohibited, systems cannot be guaranteed to accept them at the receiving end, and they must only be sent by specific agreement between sender and receiver.

**3.15Notification confidentiality**

The Co-ordination Code of Practice (see section 3.6.2) makes it clear that restricted information should not be publicly available. This applies to notifications from promoters.

Promoters may indicate on certain notifications whether or not information about a specific works is to be restricted, i.e. on an ‘all or nothing’ basis. No details of any restricted works should be automatically accessible to the public, including the location and timing of the works. A promoter may subsequently change the restriction status (e.g. from restricted to unrestricted) in a subsequent notification or using a Works Data Alteration notification.

Notice management systems should allow restricted notifications to be copied to promoters and other authorities that have expressed an interest in the street on an individual copy recipient basis at the discretion of the sender (see section 6).

Personal details and Comments should not be visible to the general public in any circumstances. Personal data elements are defined in section 4.3.

**3.16Agreements**

The new notification regime includes a mechanism for recording street authority consents that are required in various situations (e.g. for early starts) in promoter notifications. The street authority’s agreement must also be obtained before sending corrections as described above.

Details are provided in sections 4 and 5.

**3.17Conditions**

Permit schemes introduce the concept of Conditions that can be applied to a Permit. The approach adopted is based on the promoter including Conditions in their Permit Application. If the Street Authority are unhappy with the Conditions applied then the Permit is rejected and the Conditions that the Street Authority require to grant the Permit are recorded on the rejection notification. The promoter can then either accept the Conditions requested by sending in a revised Permit Application with all the required Conditions or re-plan the work to enable future Permit Applications for the work to be acceptable to the Street Authority.

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**4.DATA DEFINITION**

**4.1System model**

The key relationships in the system are described within this section. Note that “**has**” is used for a mandatory relationship, and “**can have**” is used for an optional relationship. Primary notice authority is used as the generic term for street authorities and permit authorities. Note that the following examples are not exhaustive:

• Each real-world street has a corresponding entry in the NSG maintained by the local highway authority. Motorways and trunk roads are also recorded separately in the trunk road street gazetteer (TRSG) maintained by the Highways Agency.

• A street record has one or more associated additional street data (ASD) records.

• A street (i.e. a USRN) has one or more primary notice authorities. Part of a street has one primary notice authority. Where NRSWA is in force then this will be the street authority. Where a permit scheme is in operation this will be the permit authority (which may also be the street authority). For Private Streets this will be the Local Highway Authority for the area. Street and permit authorities can have an interest in one or more streets for which they are not the primary notice authority. Other authorities (transport, bridge and sewer) can also have an interest in one or more streets.

• A works promoter can have an interest in one or more streets. A promoter can be an undertaker or a highway authority.

• A works promoter has one or more works. A promoter can also have one or more projects which involve related works in multiple streets (or parts of a street with different primary notice authorities).

• A street (or part of a street) can have many works (i.e. each with a different works reference).

• A works has one or more phases, including remedial works.

• A works can have one or more excavation sites. Sites have a life cycle. • A site may be relevant to one or more works phases.

Specific examples of EToN-related entities and relationships are as follows:

• Each promoter and authority (primary notice authority, bridge authority etc.) has associated operational districts (OD) and area of interest (AOI) data which is required to support the electronic exchange of notifications.

• A street or part of a street can have one or more associated restrictions.

• A works phase can have an associated primary authority notification (e.g. Duration Challenge).

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• A works can have associated forward planning information (only applies to Major works).

• A works can have associated textual comments, i.e. relating to the overall works life cycle. There can be many separate comments (from any interested party) associated with a works.

• A works phase can have one or more associated works notifications. There may be no notifications at all for works not involving excavation in non-traffic-sensitive streets.

• A site can occur on one or more associated registration (Registration of Reinstatement) notifications. A registration notification normally has one or more sites. An ‘empty’ registration notification with no site details can be sent to delete any existing sites, e.g. if a notification was sent by mistake or contained errors.

The following applies to NRSWA only

• A works can have associated Directions on the Placement of Apparatus given by the street authority. An invalid direction can be resent to correct information.

• A works phase can have one or more associated Directions on Timing (but only one current direction). An invalid direction can be re-sent to correct information.

The following applies only where permit schemes are operating

• A Major works has one or more Provisional Advance Authorisation (PAA) applications (applies to asset activity works phases only). Each PAA application can have one permit response from the primary notice authority. The response, if given, can either grant or refuse the PAA application. If no response is given (within the prescribed period) the PAA is deemed to be granted.

• A works has one or more permit applications. The response, if given, can either grant or refuse the permit application. If no response is given (within the prescribed period) the permit is deemed to be granted.

• Each granted permit can have one or more authority imposed variations.

• Each granted permit can have one permit revocation notification (issued by the primary notice authority)

• Each granted permit can have one or more works promoter permit variation applications. Each variation application can have one permit response from the primary notice authority. The response, if given, can either grant or refuse the variation application. Granted variations replace the original permit. If no response is given (within the prescribed period) the permit variation application is deemed to be granted.

The following applies to NRSWA and permit schemes

• A proposed works, i.e. associated forward planning information or new activity notification(s), can have an associated cancellation notification.

• A works phase can have one or more works data alteration notifications, which apply to the current data.

• A works can have one or more associated FPNs (and notification withdrawing FPNs).

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• A notification can result in an FPN (and a notification withdrawing an FPN), e.g. because it contained incorrect information.

• An FPN (and a notification withdrawing an FPN) can have associated textual comments. There can be many separate comments (from the promoter and/or primary notice authority in question) associated with an FPN.

**4.2Data structure and content**

The overall EToN notification requirements can be translated into a number of common information groups and sub-groups containing standard data elements as listed below. The aim is to ensure a harmonised and consistent approach which minimises data redundancy and facilitates efficient EToN transactions using XML web services.

1. Addressing

2. Transaction

3. Attachment

4. Agreement

5. Activity

6. Street

7. Spatial location

8. Activity timing

9. Working method

10. Site and reinstatement

11. Inspection units

12. Directions and restrictions

13. Fixed penalty notice

14. Works contacts

15. Organisation and operational districts

16. Activity Conditions (permit schemes only)

Data element definitions are provided in section 4.7 in the group order listed above. Notification data contents are defined in section 5.

The UpperCamelCase naming convention is used for all EToN data elements. Note that where an all-uppercase abbreviation (e.g. FPN or URL) is used in a name then the following word starts with a lowercase letter.

Note that hereafter the term “group” is used to refer to a group or a sub-group.

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**4.3Personal details**

The following data elements may contain personal details which must not be visible to the general public:

| Agreements |  | AgreementContact |
| --- | --- | --- |
| Works contacts |  | PromoterTelephoneNumber |
| ContractorTelephoneNumber |

FPN transactions are not recorded in street works registers or public websites.

**4.4Referencing**

The following table identifies the key entities and the key attributes used for uniquely identifying each instance of an entity.

**Table 4.1 Key attributes**

| **Entity** | **Key attribute** | **Data element name** | **Comments** |
| --- | --- | --- | --- |
| Sender | Organisation reference | NotificationFromOrg | The SWA\_ORG\_REF value allocated by DfT (see section 10). Uniquely identifies the sending organisation. |
| District number | NotificationFromDist | The DISTRICT\_REF value allocated by the organisation (see section 10). Uniquely identifies the sending district within the organisation. |
| Project | Project reference | ProjectReference | Allocated by the promoter and includes the promoter Prefix and District. |
| Works | Works reference | WorksReference | Allocated by the promoter and includes the promoter Prefix and District The works reference must be unique to an individual works and must not be re-used following permanent cancellation of proposed works. |
| Site | Site number | SiteNumber | Identifies an individual excavation site within a works. |
| Street | Unique street reference number (USRN) or  trunk road reference number (TRRN) | USRN | The NSG and TRSG should be integrated to form a seamless national dataset. The TRRN (TRSG) must be used for  motorways and trunk roads and the USRN (NSG) must be used for all other roads. |
| Notification | Notification sequence number | NotificationSequence Number | The Senders unique sequence number of a notification/response for a particular works (see section 4.5). |
| Notification | Permit reference | ApplicationSequence Number | Uniquely identifies the permit when combined with the Works Reference and NotificationSequenceNumber of the Permit response (see section 4.4.1) |
| FPN | FPN number | FPNnumber | The unique serial number of an FPN which includes the Street Authority’s prefix and District. |

All references are prefixed by the organisation prefix (discussed later) as allocated by DfT and District Number. This ensures that the works reference will uniquely identify each works, nationally.

The combination of Sender and notification sequence number will uniquely identify each notification in relation to a specific works. Phase type will not uniquely identify an individual

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works phase because a works can have more than one phase of the same type (although this would be unusual). An explicit phase number attribute is not used in EToN as **works phases and notifications are not allowed to overlap**. Notice management system applications must therefore identify each separate phase of a works from the notification type and sequence data.

It is possible (although it should not happen) that the same physical street may appear in both the NSG and TRSG. In this event system users will need to determine the appropriate record to notify the works against. If there is any duplication then the TRSG reference should be used and the notification sent to the Highways Agency.

Note that in EToN 5, site details are only provided in a Registration notice. Category A inspections will, by convention, be recorded against site number 1, and it is for system developers to decide how they accommodate this.

Note that there is no requirement in EToN 5 for the use of unique spatial feature identifiers (linking to surface topographic features etc.) in accordance with DNF principles. However, if necessary, any spatial feature can be uniquely identified using the above attributes, e.g. a polygon feature that defines an area occupied by street works is uniquely identified by works reference, and sequence number.

The FPN number will uniquely identify each fixed penalty notice, nationally.

**4.4.1Permit Schemes**

The combination of WorksReference and works promoter NotificationSequenceNumber will uniquely identify each PAA, permit and permit variation application. Permit authority permit responses will cross-reference each application using an ApplicationSequenceNumber; this will be the same as the NotificationSequenceNumber on the promoter’s original application.

**4.4.2Generating permit reference numbers**

Permit reference numbers will be generated in one of two ways.

a) for granted applications this will be a combination of the WorksReference, the ApplicationSequenceNumber and the NotificationSequenceNumber from the permit authority response notification, separated by periods, e.g.:

AB1230045A/4.3.2

b) for applications where the permit authority has failed to respond within the appropriate response period (deemed permit) this will be a combination of the WorksReference and the ApplicationSequenceNumber, e.g.:

AB1230045A/4.3

**4.5Notification sequence number**

A sequence number is a sequential number allocated by an individual district within the Sending Organisation, starting at one on the first notification sent for each works reference and incremented by one on each successive notification

Sequence Numbers will not apply to FPNs or related transactions (FPN Comments and FPN Withdrawal).

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Sequence numbers can be used to check that all notifications in relation to a particular works have been received, and ensure that they are processed in the correct order. This is particularly important as the EToN 5 protocol (see section 5) aims to minimise transmission of redundant information in successive notifications, i.e. the receiving system will need to link all related notifications together to provide a complete picture.

The use of sequence numbers is illustrated in the following example with the notifications listed in chronological order of sending.

| **Notification type** | **Sequence number** | |
| --- | --- | --- |
| **Works**  **promoter** | **Street**  **authority** |
| Forward Planning Information | 1 |  |
| Forward Planning Information (update) | 2 |  |
| Initial Notice | 3 |  |
| Direction on Timing |  | 1 |
| Works Comments (promoter) | 4 |  |
| Works Comments (authority) |  | 2 |
| Confirmation Notice | 5 |  |
| Duration Challenge |  | 3 |
| Actual Start Date | 6 |  |
| Works Data Alteration | 7 |  |
| Works Comments (promoter) | 8 |  |
| Works Stop | 9 |  |
| Registration of Reinstatement | 10 |  |
| Registration of Reinstatement | 11 |  |

**4.6Data types**

This section defines the basic data standards necessary to ensure system interoperability.

All EToN data transfers will use XML web services. EToN will conform to XML Schema Part 2: Data types Second Edition, a Recommendation of the World Wide Web Consortium (W3C), which is based on ISO 8610.

A limited number of data types apply to all notifications as summarised in the following table. These data types also apply to exchange of data with the NSG Hub (see section 10).

**Table 4.2 EToN 5 standard data types**

| **Requirement** | **XML standard data type** | **Format** | **Comments** |
| --- | --- | --- | --- |
| Date | Date | YYYY-MM-DD |  |
| Time | Time | hh:mm:ss | The 24-hour clock format is used where hh = hour, mm = minute and ss = seconds.  Optional fractional seconds component is not used. |
| Date and time | dateTime | YYYY-MM-DDThh:mm:ss | Optional fractional seconds component is not used. |
| Alpha-numeric text | String | A sequence of characters represented in UTF-8  encoding |  |
| Numeric | Decimal | A real numeric value | e.g. 123456.78 (allows number of fractional digits to be  specified in XML schema). |
| Integer | An integer numeric value | e.g. 12. |
| Data capture code | Enumeration | A set of unique values | Use of code numbers rather than descriptive text, starting at |

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| **Requirement** | **XML standard data type** | **Format** | **Comments** |
| --- | --- | --- | --- |
|  |  |  | 1. |
| Spatial co-ordinates | Decimal |  | Co-ordinates are specified to 2 decimal places. |

For consistency, enumeration is also used for binary status (Boolean), where 0 = false condition, and 1 = true condition.

There is no requirement for EToN to work outside of the UK, e.g. across different time zones.

**4.7Data element definitions**

Definitions of data elements in each group are provided in tabular form below. Each table includes the following:

1. The name of the group.

2. The name of each data element within a group.

3. Commentary on the use of each data element.

4. The data element type and maximum length (shown in brackets).

5. The allowable value range, used for data validation.

6. Notes (below the table) contain explanation and any associated rules.

Note that unless stated otherwise, the data definitions contained in this technical specification supersede the previous DfT data capture codes as published on the DfT website and elsewhere.

The use of repeating groups and elements for each transaction type are defined in section 5.

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**4.7.1Addressing**

This structure is used to provide information about the sender and recipient(s) of each notification. Thiaware of who else has received the notification and allow organisations to copy responses to recipients ofacilitate improved communications using the Works Comments notification type.

The requirements relating to sending and copying of notifications are defined more fully in section 6.

**Value range Type**

**Comments Data element**

1-9999 Integer (4) The organisation reference of the sender to NotificationFromOrg

which any responses should be sent.

1-999 Integer (3) The operational district number of the NotificationFromDist

sending organisation to which any

responses should be sent. Must be a valid

operational district within that

organisation’s OD data.

1-9999

Integer (4)

The organisation reference of the primary

recipient.

RecipientOrg

1-999

Integer (3)

The operational district number of the

primary recipient.

RecipientDist

1-9999

Integer (4)

The organisation reference of the copy

recipient.

CopyRecipientOrg

1-999

Integer (3)

The operational district number of the copy

recipient.

CopyRecipientDist

1. The Sender, Primary Recipient and Copy Recipient organisation references are the relevant SWA\_ORG\_REoperational district references are the relevant DISTRICT\_REF values assigned by the respective organisationthe OD data for each organisation and district.

2. Recipient data will allow positive confirmation that the notification has been received by the intended recipient,sent to the correct web services URL.

3. Relevant Sender, Primary Recipient and Copy Recipient address information is included in all notifications to prorecipients may change in successive notifications (at the discretion of the sender).

**Group**

**Sender**

**Primary**

**recipient**

**Copy**

**recipient**

Notes

1. The NotificationComments element should be used for notification-specific comments only. It applies to work prInformation provided by **promoters** can include, as appropriate:

Not restricted

See Table 5.1

Restricted

**Value range**

1 to 999

1 to 999

0

1

Enumeration

Enumeration

String (500)

Integer (3)

Integer (3)

dateTime

**Type**

Explanation of why works have been cancelled (applies to s54(4A) and s55(8)).

correct ordering of comments. This may

Permit and Permit Variation applications

created or last updated prior to sending,

network etc. problems. This is separate

and date that the notification is received

Indicates whether or not the notification

assigned to each notification (promoter

for audit trail purposes and to facilitate

if delivery is delayed due to system or

be significantly different from the time

and authority) for a particular works

details of any agreements etc. (see

receiving systems and has no legal

explanations, reasons, justification,

from the time stamp applied by the

A sequence number automatically

Used in permit responses to PAA,

Date and time the notification was

Details of any discussions and agreements with the street authority.

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Identifies the type of notification.

reference, according to the strict

chronological order in which the

Used for notification-specific

This structure is used for ‘header data’ in EToN notifications.

notifications are sent.

notes below).

significance.

is restricted.

**Comments**

NotificationSequence Number

ApplicationSequenceNumber

NotificationComments

VersionCreatedDatim

NotificationRestricted

NotificationType

**Data element**

**4.7.2Transaction**

**Group**

**Notification**

Notes

•

•

Explanation of why works are being classified as Immediate. •

Confirm whether or not advance information or warning has been provided to frontagers if required. •

Whether or not works have been severed from Immediate works. •

Whether the notification of starting date is being submitted in response to a s58 or s58A restriction notice. •

Whether the requirements of regulations in relation to road closure and portable light signals have been met •

Reason for revised/delayed start date for permanent reinstatements following interim reinstatements (e.g. w•

Details of the request made to the local highway authority for a USRN, status of SED approval etc. •

Reasons for working at night and/or weekends. •

Information provided by **authorities** can include, as appropriate:

Reason for giving directions. •

Details of timing restrictions if not provided using the DirectionTimes structure. •

Details of the alleged offence in an FPN. •

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**Value Type**

Valid cschemString (256)

1. Attachments are allowed on New Activity, Activity Confirmation and Works Data Alteration notices for any tyRegistrations, Bar Hole Registrations, and Restrictions.. **Attachments should only be used where neces**2. URLs for attachments should be made available before sending the notification.

Only applies to particular notification types.

provided in OD data to provide full path.

Combined with base URL components

Directory and file name details for any

associated supporting documents.

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**Comments**

NotificationAttachment

**Data element**

**4.7.3Attachment**

Attachment

**Group**

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**4.7.4Agreement**

This structure is used to provide information about consents that should be obtained before submitting par**Group Data element Comments Type Value range**

Values are limitedA-Z, numeric char“-“. Spaces must nString (25)

A reference provided by the authorising

officer.

AgreementReference

String (30) Name of the person within the relevant AgreementContact

authority who agreed the action.

dateTime

Date and time when the agreement was

obtained.

AgreementDatim

Use of a provisi1

Enumeration Details of any necessary consents that AgreementType

Customer conn2

should be obtained before carrying out the

Other work duri3

works and, in some cases, before

Consent to pla4

submitting the notification. One or more

Early start 5

applicable consent types should be

Not used 6

selected as appropriate.

Confirm specifiapplicable) prio7

Revised Reasoover a revisedrevised notifica8

Works status c9

10 Works Data Alt11 Extension to va

1. It is not mandatory for authorities to provide an agreement reference.

2. A single agreement reference, contact name and date can apply to more than one agreement type.

3. Only agreements applicable to the current notification should be included, e.g. consent to place apparatus in a pin the New Activity notification but not in any subsequent notifications.

4. A notification may still be submitted even if a required consent has not been obtained, e.g. where an early startthis is specifically prohibited in the notification definitions. The position and reasons should be expl(NotificationComments).

**Agreement**

Notes

5. Agreement Type 2 - Customer Connection During a Restriction. This is only required for the first 20 days of ththe restriction applies to connections as well as other works.

6. Agreement Type 3 - Other work during a restriction. This only applies to works that are not normally permittedthis agreement is not required for Immediate works.

7. Agreement Type 11 - Extension to Validity Period.

The use of this agreement type for notifications should not cause transactions to be rejected.

The use of this agreement type does not permit violation of the notification sequencing rules defined elsewhere i

Allowable agreement type(s) for each promoter notification group are specified in the following table.

| **Agreement type** | **11** |  | D |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **10** |  |  |  |  |  | D |
| **9** |  |  |  |  | D |  |
| **8** |  |  |  | D |  |  |
| **7** |  |  | D |  |  |  |
| **5** | D | D |  |  |  |  |
| **4** | D | D |  |  |  |  |
| **3** | D | D |  |  |  |  |
| **2** | D | D |  |  |  |  |
| **1** | D |  | D |  |  |  |
| **Applicable notification group** | | New Activity (Non-Immediate works) | Activity Confirmation | New Activity (Immediate works) | Revised Duration Estimate | Works Status Correction | Works Data Alteration |

49

50

**4.7.5Activity**

The structure is used to uniquely identify each works and associated phases or individual street occupatio**Group Data element Comments Type Value range**

See note 1 String (24) Used to link related works in different ProjectReference **Project**

streets in order to assist co-ordination.

String (500) A description of the overall project. ProjectDescription

See note 1

String (24)

Reference for the proposed works. Must

be unique nationally.

WorksReference

**Works**

String(24) Used in an Unattributable Works Response ActualWorksReference

to identify the promoter’s works reference

for the activity

Major 1

Enumeration The category of the works / activity. WorksCategory

Standard 2

Minor 3

Immediate – Ur4

Immediate – E5

1-99 Integer (2) The expected number of works phases. NumberOfPhases

Included in New Activity notification. The

number of planned phases should not

normally exceed 2 or 3.

Works involvin1 Enumeration

Works involvinprimary promot2

Works in footp3

Works in a highpedestrian plan4

Works in a highis prohibited bytimes) 5

Laying apparatsecondary pro6

Works for roadhighway author7

Replacing polesame location 8

Pole testing 9

10 Repairing, resechamber cover11 Works in non-tropening of the12 Other works no

Activity perman1 Enumeration

Not used 2

Activity postpo3

String (500)

Asset activity a1 Enumeration

Interim to perm2

Remedial reins3

Core sampling 4

All references consist of a 2-1. Project and works references apply to both works promoters and authorities.

SWA\_ORG\_PREFIX value), a 3-character district number (the DISTRICT\_REF value as a numeric string) andValues for works references are determined by the sending organisation and should be unique within the distritherefore be unique, nationally. All references are limited to uppercase alphabetic characters A-Z, numeric chaand “-“. Spaces must not be used.

Used to indicate whether or not the works ChargeCategory

will involve breaking up the street and,

where applicable, the reason for the

exemption of s74 charges:

**Codes 1-2** should be used for normal

chargeable works in publicly maintainable

streets.

**Codes 3-5** should be used for any works

(which may involve breaking up the street)

in streets that are exempt from the s74

regulations.

**Codes 6-10** should be used for works that

are exempt from the s74 regulations.

**Codes 11-12** should be used for works that

do not involve breaking up the street and

are therefore exempt from the s74

regulations.

Used in voluntary and statutory CancelledWorksStatus

cancellation notifications. Applies to first

phase only. Identifies whether works is

cancelled (i.e. plan not to proceed) or

postponed (intend to carry out works at a

later date).

A plain English, detailed description of the WorksDescription

overall works including comments on any

future phases.

Indicates the individual works phase type.

PhaseType **Phase**

A works can include multiple phases of the

same type, e.g. there could be two or more

type 1 phases if unexpected problems are

encountered on site.

Notes

51

2. In the case of collaborative works, secondary promoters should confirm that works are laying apparatus only (Ch3. A value for the planned number of phases should be provided to assist co-ordination. The actual number of pha4. Where works that have been notified as requiring excavation subsequently do not require excavation, the Workthe appropriate confirmation. A reinstatement registration is then not required.

5. Examples of “other works not involving excavation” (ChargeCategory value = 12) include works carried out onequipment have to be parked on the public highway, or where multiple Immediate notifications are given in theone or more notifications are then closed as non-excavatory.

6. CancelledWorksStatus: The “postponed” statuses might be deemed to imply that the works reference can be ruse of enumeration 3 (works postponed) does not permit the works reference to be reused where this would not

52

This structure is used to provide information about the street containing the works, restriction etc.

**Value range Type**

100001 to 999999Integer (8)

String (100)

String (35)

String (30)

String (30)

See values for STsection 10.5.13. Enumeration

1. The locality name refers to a neighbourhood, suburb, district, village, estate, settlement, or parish that mayindustrial estate contains streets it is defined as a locality in its own right.

2. Values for locality, town and county for a provisional street should be obtained from the NSG.

3. Where appropriate, additional information about particular designations should be provided in the notification co

Type 1 or Type 2 street from the NSG type

The unique street reference number of the

This should be provided wherever a works

The locality name of the provisional street.

The county name of the provisional street.

11 Street record. This element will not be

The designation applicable to the works.

The town name of the provisional street.

designation exists and that designation

The street name or description of the

53

is notified against a street where a

provided for provisional streets.

applies to the notification.

provisional street.

**Comments**

ProvisionalStreetLocality

ProvisionalStreetCounty

ProvisionalStreetName

ProvisionalStreetTown

ApplicableDesignation

**Data element**

USRN

**4.7.6Street**

**Group**

**Street**

Notes

This structure is used to provide spatial information about street and road works including the location/eand the overall area(s) occupied by works, the location/extent of individual reinstatements and therestrictions. Point, polyline or polygon features can be defined as appropriate depending on thereinstatements etc.

It is also used by both promoters and authorities for submission of Area of Interest (AOI) data. AOI polygwith ASD Additional Street Data records (see section 10).

**Value range**

All notifications 8

Restrictions an9

Point 1

Polyline 2

Simple polygon 3

Easting: 080000.0to 657700.00 . Thefor a point feature,polyline feature, anpolygon feature.

1. All notifications (InterestType value = 8) means all works notifications, restriction-related notices/directions astreet works licence.

2. All co-ordinates will use the OSGB 36 British National Grid reference system. All co-ordinate values should bi.e. equivalent of an 8-digit NGR.

3. A simple polygon is represented by a linear ring which is a closed, simple piece-wise linear path defined by a listo be connected by straight line segments. The last coordinate must be coincident with the first coordinaterequired (three to define a ring plus the fourth duplicated one).

Enumeration

Enumeration

String (120)

Decimal

**Type**

(8,2)

One or more co-ordinate pairs (Easting and

used to represent the geographical location

Used for AOI transactions only. Identifies

A label or short description of the location

whether the AOI polygon is for receiving

Northing) representing the centroid of a

Identifies the spatial feature type being

small area; or the centreline of a long

works notifications or restriction and

54

trench; or the area of a works, site,

of the works, site, restriction etc.

of a works or reinstatement etc.

licence notices.

restriction etc.

**Comments**

LocationFeatureType

LocationCoordinates

LocationDescription

**Data element**

InterestType

**4.7.7Spatial location**

**Group**

**Spatial**

**location**

Notes

4. There is no requirement in EToN 5 to identify the method of obtaining spatial co-ordinates, i.e. whether **a**positioning systems), or **relative** (directly or indirectly derived from a topographic background map). It is anticipaissues will be addressed in future revisions of EToN.

55

This structure is used to provide information about timing of works. A subset of elements is also used for **Group Data element Comments Type Value range**

See section 8 for ti

No 0

Yes 1

2. Values for ProposedStartDate and EstimatedEndDate may be updated during the life cycle of a works/phConfirmation Notice are different from those provided in an Initial Notice, if the dates are amended in an ActualDuration Estimate notice is given. All values must be stored to provide a complete historical record and auoverwrite existing values.

3. The WorkingHours flag is used to alert the street authority to planned out-of-hours working. The authority can thusing the Works Comments facility) if required, e.g. concerns over noise if working at night.

| Date | Date | Date | Enumeration  Time |
| --- | --- | --- | --- |
| The estimated end date of the works/phase  for NRSWA. The requested permit end  date for Permits. | The actual start date of the works/phase. | The actual end date of the works/phase. | Whether or not work will be done outside  (Immediate notification sent in advance).  Either the actual start time of the works  retrospectively) or estimated start time  (Immediate works notification if sent  normal working hours. |
| EstimatedEndDate | ActualStartDate | ActualEndDate | StartTimeWorkingHours |

Date

56

The proposed start date for the

works/phase.

1. Dates can be working or non-working days.

ProposedStartDate

**4.7.8Activity timing**

**Activity**

**timing**

Notes

57

**4.7.9Working method**

This structure is used to provide information about proposed working methods, including any traffic mTraffic Regulation Orders which will impact on the street and wider network. This requires the proimplications of any applicable designations.

**Value range Type**

**Comments Data element**

None / signing 1

Enumeration The type of traffic management (TM) that CarriagewayRestriction

Traffic control (2

the promoter plans to use for the works, Type

Traffic control (3

and the impact on vehicular traffic.

Traffic control (4

Traffic control (5

Traffic control (6

Traffic control (7

Lane closure 8

Contra-flow 9

10 Road closure

No 0 Enumeration Whether or not the traffic management will FootwayClosure

Yes 1

affect pedestrians.

No 0 Enumeration Whether or not the traffic management will ParkingSuspensions

Yes 1

affect parking.

1. The CarriagewayRestrictionType value should identify the most severe traffic management type that will be usedorder of severity these are: Road closure, Contra-flow, Lane closure, Traffic control (convoy working), Trafficcontrol (give and take), Traffic control (multi-way signals), Traffic control (two-way signals), Traffic control (stop/go

**Group**

**Traffic**

**management**

Notes

Not applicable

Site combined

This structure contains information about reinstatements where an activity involves excavation. It islocation information. Separate details including spatial data must be provided for each individual site.

Remedial - gua

Remedial - gua

<= 1.5m of cov

Site subsumed

> 1.5m of cove

Carriageway

Permanent

Method C

Method D

Cycleway

Method B

**Value range**

Footpath

Footway

Bar hole

Interim

0-9999.99

Verge

0-99.99

1-999

1

1

4

4

2

3

2

2

3

5

5

3

3

4

4

2

1

1

Enumeration

Enumeration

Enumeration

Enumeration

Integer (3)

Decimal

Decimal

**Type**

Date

(6,2)

(4,2)

the guarantee period of the reinstatement.

Depth of excavation required to determine

Site ID number which must be unique for

The reinstatement construction method.

The type of reinstatement carried out.

The date that the site was reinstated.

58

Length of reinstatement in metres.

Width of reinstatement in metres.

Reinstatement location codes.

**Comments**

the works.

InterimConstructionMethod

ReinstatementLength

ReinstatementWidth

**4.7.10Site and reinstatement**

ReinstatementType

ReinstatementDate

**Data element**

SiteLocation

SiteNumber

SiteDepth

1. For works on public highways such as footpaths and bridleways the reinstatement classification appropriate toe.g. made-up footpaths should be classified as footway, unmade footpaths and bridleways as verges, and metall2. In situations where two or more sites with interim reinstatement are combined into a single permanent reinstatemor an existing site updated with the overall dimensions of the permanent reinstatement and each of the ot“combined” (SiteDepth value = 3).

**Group**

**Site and**

**reinstatement**

Notes

3. In situations where the promoter is prevented from carrying out planned interim to permanent reinstatement ofresurfaced or because the site has been subsumed within another promoter’s works/reinstatement then the“subsumed” (SiteDepth value = 4) and there will be no warranty.

See chapte4. Construction method applies to interim reinstatement only (ReinstatementType value = 1).

*Reinstatement of Openings in the Highway*, Second edition, 2002.

5. Diagrams or digital photographs etc. of reinstatements should be referenced in the NotificationAttachment eleme6. Bar holes count as a single excavation and reinstatement for registration purposes.

59

60

**4.7.11Inspection units**

This structure is used to provide information about inspection units as required by the current Inspections **Group Data element Comments Type Value range**

0 to 999 Integer (3) On a notification of works this will be the EstimatedInspectionUnits

estimated number of inspection units.

0 to 999

Integer (3)

On a registration this will confirm the actual

number of inspection units.

ActualInspectionUnits

1. Estimated inspection units are not required on advance notifications.

**Inspection**

**units**

Notes

This structure is used for all timing-related notifications sent by authorities, including Directions onChallenge or Undue Delay.

1-60 (see notes be

See timing rules in

The Direction on timing data allows a street authority to specify the dates and times when work may or mfor irregular timing patterns, e.g. special events.

**Value range**

1-999

Integer (2)

Integer (3)

dateTime

1. The NotificationComments element should be used for any supporting explanation etc.

**Type**

Date

an Undue Delay and Proposed Restriction

Deadline date and time for complying with

End date of a s58 or s58A restriction for a

consecutive working days (Reasonable

The duration in months of a proposed

following Street Works notifications.

61

The street authority’s estimate in

specified street.

**Comments**

restriction

Period).

AuthorityDurationEstimate

**4.7.12Directions and restrictions**

RestrictionEndDate

RestrictionDuration

DeadlineDatim

**Data element**

2. Regulations prescribe the maximum duration of restrictions. The maximum duration of a restriction following sthe nature of the works; the maximum duration is 5 years (60 months). The maximum duration of a restriction foas follows:

**Maximum duration Street criteria**

1 year Traffic-sensitive streets and streets in road category 0, 1 or 2 which are not traffic-sensitive streets

6 months Streets in road category 3 or 4 which are not traffic-sensitive streets

**Group**

**Response**

**deadline**

**Restriction**

**times**

**Duration**

**challenge**

Notes

Working withou

An offence undcomply with su

An offence und

An offence und

An offence und

An offence cres74A(11)

An offence und

Working in bre

An offence cres74(7B)

**Value range**

1

6

7

2

3

4

5

8

9

Enumeration

String (200)

String (30)

String (11)

**Type**

Date

A unique reference for each FPN allocated

authority’s Organisational Prefix, District

by the issuing authority. Consists of the

The name of the department, section or

Number plus an FPN serial number (1-

The date that the alleged offence was

Describes the location of the offence.

62

The offence code as defined in the

authorised officer issuing the FPN.

999999) represented as numeric

This structure is used for the issue of fixed penalty notices.

regulations.

**Comments**

characters.

committed.

FPNauthorisedOfficer

**4.7.13Fixed Penalty Notice**

FPNoffenceCode

FPNoffenceDate

**Data element**

FPNlocation

FPNnumber

Name

1. Details of payment methods and the contact name and address for representations must be provided in the stre2. The NotificationComments field should be used to provide details of the alleged offence.

**Group**

**FPN**

Notes

This structure is used for providing works contact details where required in particular notifications.

**Value range Type**

**Comments**

String (60) The name of the owner organisation.

String (35)

The postal address of the owner

organisation.

String (20)

A telephone number for the owner

organisation.

String (8) The post code of the promoter

String (60)

The name of the agent, i.e. prime

contractor.

String (35)

The postal address of the agent

organisation.

String (20)

A telephone number for the agent

organisation.

String (8) The post code of the contractor

1. The promoter details should be specified if different from the organisation identified in the works prefix. Theresponsible for undertaking the works.

2. Promoter and contractor names should be organisation names, not names of individuals. Promoter and contracvisible to the general public. The Promoter and contractor telephone numbers may be general or personal numb

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**4.7.14Works contacts**

**Data element Group**

PromoterName **Works**

PromoterAddress (**2-5**) **contacts**

PromoterTelephone

Number

PromoterPostCode

ContractorName

ContractorAddress (**2-5**)

ContractorTelephone

Number

ContractorPostCode

Notes

This structure is used to provide information about organisations involved in the exchange of street worksAuthorities and undertakers will continue to submit OD batches to the NSG Hub using the current transferOD data can also be exchanged directly (immediately) between authorities and undertakers using an EToboth cases the OD file also includes area of interest (AOI) polygon data.

**Value range Type**

String (40)

See DfT data captInteger (4)

String (2)

String (60)

dateTime

1-999 Integer (3)

Street Authorit1 Enumeration

Highway Autho2

Utility 3

Private Street 4

Transport Auth5

Bridge Authorit6

Sewer Authorit7

Street Naming 8

Permit Authorit

9

String (20)

Date

String (100)

Standard IP addrewhere A,B,C andand fourth elementvalue in each elemrange 0 to 255 inclString (15)

String (50)

The directory name on the FTP server (still

The SWA\_ORG\_REF number as assigned

The date on which the district was closed.

The IP address for service of notifications

Unique district reference number created

Date and time the District was created or

The national permit scheme reference

exchange of street works information.

transfers (still required for inspections

The function of the district involved in

FTP address for receiving batch file

64

(still required for inspections data).

organisation as assigned by DfT.

The SWA\_ORG\_PREFIX for the

The name of the organisation.

required for inspections data).

The name of the District.

by the organisation.

last updated.

**Comments**

by DfT.

data).

**4.7.15Operational districts (OD) data**

**Data element Group**

OrganisationName **Organisation**

OrganisationID

OrganisationPrefix

DistrictName **District**

VersionCreatedDatim

DistrictID

DistrictFunction

DistrictPermitSchemeID

DistrictClosedDate

DistrictFTPserverName

DistrictFTPserverIP

address

DistrictFTPdirectory

**Value range Type**

**Comments Data element Group**

String (256)

Web service URL for exchange of

notifications using XML.

DistrictNotificationsURL

String (256) The base URL of the FTP site used for AttachmentURLprefix

viewing and downloading of documents

that are ‘attached’ to notifications.

String (20) Fax number for the district, used solely for DistrictFaxNumber

receiving notifications in the event of

system failure etc.

String (35)

Postal address for the district. DistrictPostalAddress (**2-5**)

Including spaces String (8)

Post code for the district. DistrictPostCode

String (20) Telephone number for the district. DistrictTelephoneNumber

No 0 Enumeration Applies to street authorities only. Indicates OutOfHoursArrangements

Yes 1

if the authority can receive and respond to

notifications during non-working hours.

String (256) Web service URL for receiving FPNs. FPNdeliveryURL

Applies to works promoters only.

String (255) Email address for delivery of FPNs. FPNdeliveryEmailAddress

Applies to works promoters only.

String (20) Fax number for the delivery of FPNs. FPNdeliveryFaxNumber

Applies to works promoters only.

String (35) Postal address for the delivery of FPNs. FPNdeliveryAddress (**2-5**)

Applies to works promoters only.

Including spaces String (8)

Post code for the delivery of FPNs. FPNdeliveryPostCode

Applies to works promoters only.

String (256) URL for payment of FPNs by credit card FPNpaymentURL

via the authority’s website. Applies to

street authorities only.

String (20) Contact telephone number for payment by FPNpaymentTelephone

credit or debit card. Applies to street

authorities only.

Number

String (40) Bank name for payment of FPNs by BACS. FPNpaymentBankName

Applies to street authorities only.

Numeric values in String (6) Sort code for payment of FPNs by BACS. FPNpaymentSortCode

Applies to street authorities only.

String(8) Account number for payment of FPNs by FPNpaymentAccount

BACS. Applies to street authorities only. Number

String (40) Account name for payment of FPNs by FPNpaymentAccountName

cheque (post or in person). Applies to

street authorities only.

String (35) Postal address for payment of FPNs by FPNpaymentAddress (**2-5**)

cheque (by post). Applies to street

authorities only.

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**Value range Type**

**Comments Data element Group**

String (8) Post code for payment of FPNs by cheque FPNpaymentPostCode

(by post). Applies to street authorities only.

String (30) Name of the department, section or officer FPNcontactName

to whom representations should be made.

Applies to street authorities only.

String (35) Postal address for representations in FPNcontactAddress (**2-5**)

writing. Applies to street authorities only.

String (8) Post code for representations in writing. FPNcontactPostCode

Applies to street authorities only.

String (20) Telephone number for department, section FPNcontactTelephone

or officer to whom representations should Number

be made. Applies to street authorities only.

Notes

1. The district name should consist of organisation name and location in order to provide a self-contained descriptio2. The FPNdeliveryURL element is used to specify the address for receiving FPNs via EToN, if required. The valusame as that for DistrictNotificationsURL, or a separate address. A null value means that the undertaker does nEToN.

The OutOfHoursArrangements element will allow promoters to know whether or not initial notifications for Immednormal working hours have to be sent within 2 hours. This may be helpful to promoters in some situations, e.g.correct information for the notification, particularly where undertakers have limited out-of-hours cover themselvesSystems should attempt to send notifications as soon as possible irrespective of this flag. If notifications cannot be sent via Enotification must be served by some other means. If this flag is not set then systems should attempt to resend notifications viworking day.

4. Application layer protocol prefixes (e.g. “http://” and “ftp://”) must be included in URLs.

3.

5. The DistrictFTPserverName value must **not** include the application layer protocol prefix “ftp://”

66

Time Constrai

Date Constrai

Traffic Space

Light Signals

Out of Hours

Road Closure

Road Occupa

Traffic Manag

Material and

**Value range**

1.

3.

2.

4.

9.

6.

8.

7.

5.

Enumeration

**Type**

Enumerated condition classifications, as

This structure is used to provide information about permit conditions.

67

defined by the DfT

**Comments**

**ConditionType**

**Data element**

**4.7.16Activity Conditions**

10. Work Method11. Consultation12. Environmenta13. Local

String (500)

Any text associated with the conditions

specified

**ConditionText**

**Group**

**ActivityConditions**

**5.NOTIFICATION DEFINITION**

**5.1General**

To ensure that EToN operates efficiently using XML web services, each transaction will involve transmission of only the minimum necessary amount of data, i.e. successive notifications will not contain (repeat) data already provided in previous notifications. Sending and receiving systems must therefore automatically manage the associated data in order to ‘reconstitute’ each formal notification and provide users with the full information necessary to correctly interpret the notification in accordance with statutory requirements. This is a fundamental change from previous EToN implementations.

The term “transaction” is used in relation to EToN web services (see section 7) rather than the higher level business processes.

The term “notification” is used to generically describe messages between parties, which includes Notices issued under NRSWA and Permit related transactions.

EToN 5 will support the following transaction types:

1. Send a notification

2. Send OD/AOI data

3. Get identity data (EToN Ping)

4. Get restrictions data

Transactions 1-2 involve sending (pushing) data to the required recipient organisation(s) whilst transactions 3-4 involve getting (pulling) data from a single organisation. This section defines the data content associated with each transaction (i.e. the data payload in each SOAP request and response message, as appropriate).

Table 5.1 identifies all of the individual notifications to be supported by EToN 5. This includes all of the notification-related transactions listed in Table 3.1 plus additional supporting transactions related to the new functionality described above.

Notifications with the same or very similar data content are grouped by notification type as shown. The use of an explicit type number will allow receiving applications to unambiguously identify incoming notification types without the need for complex logic to ‘decode’ the data. The following notification data definitions contain any rules necessary to identify individual notifications. Separate notification types are defined for withdrawal of street authority notifications, i.e. FPNs.

Notification types with the same or very similar data content are further grouped as shown.

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**Table 5.1 List of notification groups and types**

| **Notification/group name** | **Type no.** | **Individual notification name** |
| --- | --- | --- |
| Forward Planning Information | 0100 |  |
| New Activity | 0200 | Initial Notice |
| 0210 | PAA (Major) / Permit Application (Non-major) |
| Activity Confirmation | 0300 | Confirmation Notice |
| 0310 | Permit Application |
| 0311 | Variation Application |
| Actual Start Date | 0400 |  |
| Revised Duration Estimate | 0500 | Revised Duration Estimate |
| 0510 | Duration Variation Application (Works in Progress) |
| Works Stop | 0600 |  |
| Registration of Reinstatement | 0700 | Partial Registration |
| 0701 | Full Registration |
| Bar Hole Registration | 0800 |  |
| Cancellation | 0900 |  |
| Works Status Correction | 1000 | Revert Actual Start |
| 1001 | Revert Work Stop |
| Works Data Alteration | 1100 | Error Correction |
| 1110 | Works Data Variation |
| Duration Challenge | 1200 |  |
| Duration Challenge Non-acceptance | 1300 |  |
| Informal Overrun Warning | 1400 |  |
| Works Comments | 1500 |  |
| Directions and Permit Responses | 1600 | Direction on Timing |
| 1601 | Direction on Placing Apparatus |
| 1602 | Undue Delay |
| 1610 | Grant PAA |
| 1611 | Grant Permit |
| 1612 | Grant Permit Variation |
| 1613 | Refuse Permit / PAA / Variation |
| 1615 | Revoke Permit (Proposed Works) |
| 1616 | Authority Imposed Variation |
| 1617 | Revoke Permit (Works in Progress) |
| Restrictions | 1700 | Proposed Restriction (Road Works) |
| 1701 | Restriction in Force (Road Works) |
| 1702 | Proposed Restriction (Street Works) |
| 1703 | Restriction in Force (Street Works) |
| Intention to Issue a Street Works Licence | 1800 |  |
| Unattributable Works | 1900 |  |
| Unattributable Works Response | 2000 | Unattributable Works Response - Acceptance |
| 2001 | Unattributable Works Response – Non-acceptance |
| Fixed Penalty Notice | 2100 | Fixed Penalty Notice |
| 2101 | Fixed Penalty Notice Withdrawal |
| FPN Comments | 2200 |  |
| Operational Districts Data | 2300 |  |
| EToN Ping | 2400 |  |
| Get Restrictions | 2500 |  |

**5.2Notification data definitions**

The following sub-sections define the structure and data content of the notification(s) in each group in the order listed in Table 5.1 above. The associated XML schemas define the structures to be used for data transport.

The tables also define any rules necessary to distinguish different notifications.

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The tables define the following for each notification type:

1. The applicable groups and the applicable data elements within each group. Individual notifications within a group may involve different sub-sets of elements.

2. Group obligation, i.e. the requirement for including a group or sub-set of elements. Obligation is indicated as: “**m**” for mandatory, “**o**” for optional and “**c**” for conditional.

3. Cardinality, i.e. the number of instances of each element. Cardinality is indicated as either “**1**”, “**1-n**” or “**0-n**” where n is any number, e.g. number of sites.

4. Element obligation, i.e. the requirement for providing a value for an element within an applicable group or sub-set of elements. Obligation is indicated as above.

5. Any conditional rules (obligation = conditional) for including groups and elements, and associated data validation rules.

Explanatory notes and further rules are included as appropriate after each table.

Where a value is provided, it should conform to the description or value range as defined in section 4. A conditional element should contain a value if the described conditions are met.

Where data is not relevant then the XML element should not be supplied at all. In the case of numeric fields a 0 (zero) should only be supplied if it is a valid data value.

Providing a null value for an element (as distinct from not providing the element at all) is used as the means of indicating that the previous (i.e. current) value of that element is replaced with a null value; any previous values must still be retained for audit trail.

In the case of optional elements a null value may be provided to indicate that a previous value for that element should be removed. This rule does not apply to the following optional elements as these elements relate to the specific notification:

1. Copy Recipients

2. Notification Comments

3. Agreements

70

It contains a sub-set of the data elements included in the New Activity notification (see 5.2.2). All groupshighway authorities.

**Data element**

All organisation references (i.e. combinDISTRICT\_REF values) must be differMust be 0100.

Promoter prefix must be for the same osender.

Not supplied if notifying works in a provMust be provided if notifying works in aMay be provided if a provisional street.

Must be provided if a provisional street.Must be provided if a provisional street.

| m | m | m | m | m  m  mo  m  m  m  mm  m  o  o  o  ccccc |
| --- | --- | --- | --- | --- |
| NotificationFromDist | RecipientOrg | RecipientDist | CopyRecipientOrg | CopyRecipientDistNotificationTypeNotificationSequenceNumberVersionCreatedDatimNotificationRestrictedNotificationCommentsNotificationAttachmentProjectReferenceProjectDescriptionWorksReferenceNumberOfPhasesChargeCategoryWorksDescriptionUSRNProvisionalStreetNameProvisionalStreetLocalityProvisionalStreetTownProvisionalStreetCounty |
|  | 1 | | 0-n11  0-n1  1 | |
|  | m | | omoomm | |
|  | Primary recipient | | Copy recipientNotificationAttachmentProjectWorksStreet | |

This structure is used for submission of forward planning information.

**Name**

**5.2.1Forward Planning Information**

**Obligation Cardinality**

m

NotificationFromOrg 1

71

**Obligation**

**Group**

**Name**

m

Sender

Must be provided if a provisional street,c

LocationFeatureType

Must be supplied if a value for Locationc

LocationCoordinates

m

LocationDescription

See timing rules in section 8. m

ProposedStartDate

| m  m  m  m  m  m  m  o  o  o  o  o |
| --- |
| EstimatedEndDateCarriagewayRestrictionTypeFootwayClosureParkingSuspensionsPromoterNamePromoterAddressPromoterPostCodePromoterTelephoneNumberContractorNameContractorAddressContractorPostCodeContractorTelephoneNumber |

1. Forward planning information is only submitted for Major works.

72

2. Promoters are encouraged to provide polygon data.

1

m

Spatial location (works)

1-n

1

1 m

Activity timing

1 o

Traffic management

12-5 o

Works contacts

1

12-5 o

1

Notes

This structure is used to advise authorities of new works including advance notice of Major works, noticeof Immediate (Urgent and Emergency) works, PAA applications for Major works and initial Permit applicatiIn the case of Immediate works, the New Activity notification also meets the statutory requirement for(see section 5.2.4).

**Data element**

All organisation references (i.e. combinDISTRICT\_REF values) must be differMust be 0200 or 0210.

Allowable agreement types for the applvalue) are defined in section 4.7.4.

| m | m | m | m | m  m  m  m  m  mm  m  m  mm  o  o |
| --- | --- | --- | --- | --- |
| NotificationFromDist | RecipientOrg | RecipientDist | CopyRecipientOrg | CopyRecipientDistNotificationTypeNotificationSequenceNumberVersionCreatedDatimNotificationRestrictedNotificationCommentsNotificationAttachmentAgreementReferenceAgreementContactAgreementDatimAgreementTypeProjectReferenceProjectDescription |
|  | 1 | | 0-n1  1-n1  0-n1 | |
|  | m | | omoo  o | |
|  | Primary recipient | | Copy recipientNotificationAttachmentsAgreementsProject | |

**5.2.2New Activity**

A New Activity notification should be provided for each phase of a works.

**Group**

**Name**

**Obligation**

**Cardinality**

**Obligation**

m

NotificationFromOrg 1

m

73

**Name**

Sender

Promoter prefix must be for the same osender.

Not supplied if notifying works in a prov

Must be provided if notifying works in a

May be provided if a provisional street.

Must be provided if a provisional street.

Must be provided if a provisional street.

Not supplied if notifying works in a prov

Spatial data should be provided for all ipromoter works (ChargeCategory=6) .for Major activities (WorksCategory val

Mandatory for non-Immediate activitiesworks. See timing rules in section 8.

Only applicable to Immediate (Urgent omust be supplied.

Only applicable to Permit / PAA Applic

m

WorksReference 1

m

WorksCategory

m

NumberOfPhases

m

ChargeCategory

m

WorksDescription

m

PhaseType 1

c

USRN 1

c

ProvisionalStreetName

c

ProvisionalStreetLocality

c

ProvisionalStreetTown

c

ProvisionalStreetCounty

m

ApplicableDesignation 0-n

m

LocationFeatureType 1

| cm  m  m  c | m  m  m  m  o  c | m  m  m  m  m  m  m  m  o  o |
| --- | --- | --- |
| LocationCoordinatesLocationDescriptionProposedStartDateEstimatedEndDateActualStartDate | StartTimeWorkingHoursCarriagewayRestrictionTypeFootwayClosureParkingSuspensionsConditionText | ConditionTypeEstimatedInspectionUnitsPromoterNamePromoterAddressPromoterPostCodePromoterTelephoneNumberContractorNameContractorAddressContractorPostCodeContractorTelephoneNumber |
| 1-n11  1  1 | | 0-n112-51  12-51 |

74

m

m

m

o

o

m

m

m

c

mo

o

Works

Phase

Street

Spatial location (works)

Activity timing

Traffic management

ActivityConditions

Inspection units

Works contacts

1. The NotificationRestricted value is provided in the initial notification and applies to all subsequent notificationsnotification or a correction notification.

2. The Estimated InspectionUnits value should be zero for activities not involving excavation or works undertalaying apparatus only (ChargeCategory value = 8).

75

Notes

3. ActualStartDate and Time for Immediate works: Immediate works covers Urgent works which might be planneassumed that street authorities would want to be notified of these works as soon as possible (Note that this coulof work).

4. If two or more PAA transactions are sent, without the preceding one(s) being responded to, the most recent athe previous applications, in both data content and response times.

5. The Permit Application (Notification Type 0210) may only be used on the initial application for the phase. Thtype must be used on all subsequent applications, even if the permit was not originally granted / deemed.

This structure is used for confirmation or revision of proposed start and end dates. Where a permit regmay be used to apply for the permit.

The notification can also be used to update particular data items provided in an New Activity notificationcorrection notification.

**Data element**

All organisation references (i.e. combinDISTRICT\_REF values) must be differMust be 0300, 0310 or 0311.

Updates value provided in previous notAllowable agreement types are definedUpdates value provided in previous notCan only be provided if the previous no

This structure may also be used to apply for permit variations for all activity types.

| m | m | m | m | m  m  m  m  m  mm  m  m  mm  oo  o  o | o | m  o |
| --- | --- | --- | --- | --- | --- | --- |
| NotificationFromDist | RecipientOrg | RecipientDist | CopyRecipientOrg | CopyRecipientDistNotificationTypeNotificationSequenceNumberVersionCreatedDatimNotificationRestrictedNotificationCommentsNotificationAttachmentAgreementReferenceAgreementContactAgreementDatimAgreementTypeProjectReferenceProjectDescriptionWorksReferenceNumberOfPhases | ChargeCategory | WorksDescriptionUSRN |
|  | 1 | | 0-n1  1-n11  0-n1  1 | | | |
|  | m | | omo  omoo | | | |
|  | Primary recipient | | Copy recipientNotificationAttachmentsAgreementsProjectWorksStreet | | | |

**Name**

**5.2.3Activity Confirmation**

**Group**

**Obligation**

**Cardinality**

**Obligation**

m

NotificationFromOrg 1

m

76

**Name**

Sender

All appropriate designations must be s

Updates value provided in previous notfor both elements on a complete replac

Updates value provided in previous notUpdates values provided in previous nOnly applicable to permits (0310 and 0Updates must be supplied on a comple

1. A Notification Type 0310 (Permit Application) may be issued whilst a PAA (New Activity for Major Works) is outsdeemed. In the absence of clear legal guidance it is suggested that the neither the permit nor PAA application shuntil the later of the Permit and PAA application response times.

2. The Permit Application notification type may only be used on the initial application for the phase. The Variationbe used on all subsequent applications, even if the permit was not originally granted / deemed. If the Variation abefore the preceding Permit application has been responded to or deemed, the variation application should not blater of the Permit and variation application response times. A rejection will apply to both the original application

m

ApplicableDesignation 0-n o

| mm  m | m | m  o | m | m  o | m  o | m | m | o | m | m | m | o | m |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| LocationCoordinatesLocationDescriptionProposedStartDate | EstimatedEndDate | WorkingHoursCarriagewayRestrictionType | FootwayClosure | ParkingSuspensionsConditionText | ConditionTypeEstimatedInspectionUnits | PromoterName | PromoterAddress | PromoterPostCode | PromoterTelephoneNumber | ContractorName | ContractorAddress | ContractorPostCode | ContractorTelephoneNumber |
| 1-n11  1  1 | | | | | 0-n1 | 1 | 2-5 | 1 | | 1 | 2-5 | 1 | |
| om |  | o |  | c | o | o | | | | o | | | |
| Activity timing |  | Traffic management |  | ActivityConditions | Inspection units | Works contacts | | | | | | | |

m

77

LocationFeatureType

1

o

Spatial location (works)

Notes

The notice can also be used to update particular data items provided in the previous notification(s).

**Data element**

All organisation references (i.e. combinDISTRICT\_REF values) must be differMust be 0400.

Updates value provided in previous not

1. Updates to contact details will allow for changes in contractors and individuals which might reasonably occur in p

| m | m | m | m | m  m  m  m  m  mm  o | m | o | m | m | m | o | m |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| NotificationFromDist | RecipientOrg | RecipientDist | CopyRecipientOrg | CopyRecipientDistNotificationTypeNotificationSequenceNumberVersionCreatedDatimNotificationCommentsWorksReferenceActualStartDatePromoterName | PromoterAddress | PromoterPostCode | PromoterTelephoneNumber | ContractorName | ContractorAddress | ContractorPostCode | ContractorTelephoneNumber |
|  | 1 | | 0-n1  111 | | 2-5 | 1 | | 1 | 2-5 | 1 | |
|  | m | | ommmo | | | | | o | | | |
|  | Primary recipient | | Copy recipientNotificationWorksActivity timingWorks contacts | | | | | | | | |

This structure is used to notify the actual start date of planned works.

**5.2.4Actual Start Date**

**Note that this transaction cannot be used to change the duration of a permit.**

**Group**

**Name**

**Obligation**

**Cardinality**

**Obligation**

m

NotificationFromOrg 1

m

78

**Name**

Sender

Notes

This structure is used to notify a revised duration of works either before the works have started (NRSprogress.

**Data element**

All organisation references (i.e. combinDISTRICT\_REF values) must be differMust be 0500 or 0510.

May only be specified for notification tyAllowable agreement types are definednotification type 0500

Only applicable to Duration Variation A

1. Notification comments must include an explanation of the reasons for the revised duration estimate.

3. Notification Type 0500 may still be used in permitting scenarios to agree the reasonable period, without varyinduration challenge.

| m | m | m | m | m  m  m  mm  o | m | m  mm  m  o | m |
| --- | --- | --- | --- | --- | --- | --- | --- |
| NotificationFromDist | RecipientOrg | RecipientDist | CopyRecipientOrg | CopyRecipientDistNotificationTypeNotificationSequenceNumberVersionCreatedDatimNotificationCommentsAgreementReference | AgreementContact | AgreementDatimAgreementTypeWorksReferenceEstimatedEndDateConditionText | ConditionType |
|  | 1 | | 1-n111  0-n1  1 | | | | 0-n |
|  | m | | omommc | | | | |
|  | Primary recipient | | Copy recipientNotificationAgreementsWorksActivity timingActivityConditions | | | | |

**Name**

**5.2.5Revised Duration Estimate**

**Obligation Cardinality**

m

NotificationFromOrg 1

2. The EstimatedEndDate value is relative to the last start date provided

79

**Group**

**Name**

**Obligation**

m

Sender

Notes