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**CHARTERED
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IRELAND

eTendering

SCSI / RICS Guidance Note

1st edition



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eTendering

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Foreword and Acknowledgments

It is with great pleasure that I introduce to you the *eTendering Guidance Note*.

Produced by the SCSi Quantity Surveying Professional Group Committee, this eTendering guidance provides a framework where both clients and tenderers can reduce their costs, remove unnecessary administration and streamline the overall tendering process.

This guidance note has been prepared to respond to the growth in the preparation of tender documents in electronic format. It relates to the management of the contractor selection and price setting processes as part of the procurement of construction work.

This guidance note is generally based upon RICS guidance note (GN 22/2010)- 2nd edition and has been adapted for use in Ireland by the SCSi Quantity Surveying Working Group

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SCSI / RICS guidance note

This is a guidance note. It provides advice to SCSI / RICS members and others on aspects of their practice. Where procedures are recommended for specific professional tasks, these are intended to embody 'best practice', i.e. procedures which in the opinion of SCSI / RICS meet a high standard of professional competence.

Members are not required to follow the advice and recommendations contained in the note. They should, however, note the following points.

When an allegation of professional negligence is made against a surveyor, the court is likely to take account of the contents of any relevant guidance notes published by SCSI / RICS in deciding whether or not the surveyor had acted with reasonable competence.

In the opinion of SCSI / RICS, a member conforming to the practices recommended in this note should have at least a partial defence to an allegation of negligence by virtue of having followed those practices. However, members have the responsibility of deciding when it is appropriate to follow the guidance.

On the other hand, it does not follow that members will be adjudged negligent if they have not followed the practices recommended in this note. It is for each surveyor to decide on the appropriate procedure to follow in any professional task. However, where members depart from the practice recommended in this note, they should do so only for a good reason. In the event of litigation, the court may require them to explain why they decided not to adopt the recommended practice. Also, if you have not followed this guidance, and your actions are called into question in an SCSI / RICS disciplinary case, you will be asked to justify the steps you did take and this may be taken into account.

In addition, guidance notes are relevant to professional competence in that each surveyor should be up-to-date and should have informed him- or herself of guidance notes within a reasonable time of their promulgation.



Introduction

For the purposes of this guidance note, eTendering is defined as the electronic issuing and receipt of any tender documentation in electronic format as part of the procurement process. Following standard practice will avoid unnecessary administration resulting from any inconsistency, misunderstanding and/or technical conflicts.

When issuing and receiving some or all tender documents in electronic format, it is essential that there is a clear understanding amongst all parties concerned as to the nature and intent. By adopting standard practice (both in terms of presentation and content), all parties will benefit from consistency of approach, avoiding ambiguity and reducing frustrations over technical incompatibility.

This reduction in waste, particularly the production of multiple copies of paper-based information, can also lead to a less environmentally demanding and more sustainable tender process.

There are many benefits that can flow from the introduction of eTendering, ranging from simplifying the process, reducing tendering costs, avoiding the need for double or triple entry of the same information, to ultimately enabling a fairer assessment between tenders.

While there are undoubtedly positive outcomes from the introduction of electronic tendering, there are barriers to successful adoption. Given natural inertia, lack of agreed standards, little or no impartial advice and the fear of legal and technical traps, it is not surprising that the industry has in the past spent a lot of time talking about the benefits of eTendering, but has not followed this talk with action.

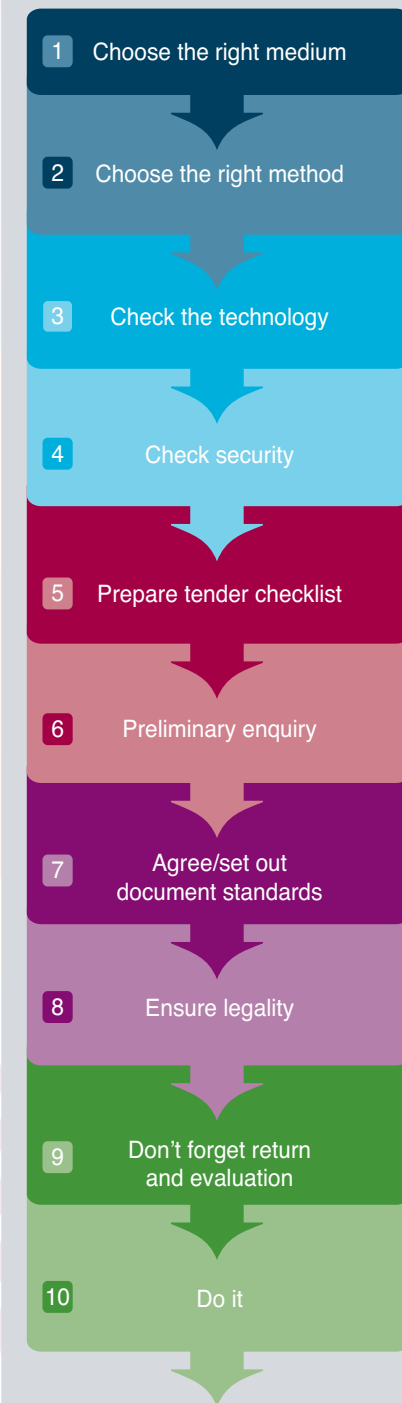
This guidance note is aimed at dealing with a number of the perceived barriers to the wide scale adoption of eTendering within the construction industry.

It is stressed that this guidance note is not intended to replace or supersede guidance on procurement. It is entirely concerned with the tender process and procedure, and assumes that the most appropriate procurement route has already been selected. This guidance note addresses the complete process from the preliminary enquiry through to tender acceptance and withdrawal.

This guidance note should be used with an appropriate form of contract, and should not compromise the underlying contractual conditions applicable.

Distinct stages of the eTendering process are listed in the adjacent ten point plan.

Figure 1: The e-tendering ten point plan



1. Tender methodology

1.1 Choosing the medium of data exchange

1.1 This section looks at the types of tender information that might be transferred in electronic format, the various methods available to transmit the electronic tender information and the specific requirements of online tendering.

Setting up a procurement process requires a series of decisions, including:

- choosing a procurement route that allocates risk between the client and the contractor. This does not necessarily require the exchange of information between the parties;
- selecting a contractor and
- setting a price.

Selecting a contractor and setting a price are often an integrated process and increasingly, selecting a contractor involves non-cost related criteria as well as the price setting process. The public sectors in particular, by adopting a best value approach to procurement, have implemented a two stage approach where non-cost criteria may be evaluated before costs are considered. However, both processes rely heavily on the exchange of information.

Whatever procurement route is being used, the price setting process requires the exchange of information. The client will need to transmit requirements to the tenderer(s), who will in turn need to transmit bids.

Some procurement routes use more than one price setting mechanism, such as 'two stage tendering', where lump sum tender may be followed by negotiation.

1.2 Electronic formats

The information to be exchanged will invariably be in a range of electronic formats, including:

- word processed, e.g. Microsoft Word
- spreadsheets, e.g. Microsoft Excel
- CAD, e.g. AutoCAD
- BIM, e.g. Revit
- proprietary information exchange formats, e.g. PDF, BuildSoft and CostX etc.
- industry standard exchange formats, e.g. XML, CITE, etc.

The above is illustrative and is not intended to be an exhaustive list of the types of formats that might be used. Technical, security, file organisation and file naming issues associated with each format are dealt with in subsequent sections.

The practical aspects of preparing and distributing word processed and spreadsheet files are a matter of general office procedure. All text based documents should always be page referenced so the recipient can check for completeness.

The use of CAD will need some specialist support. It is recommended that drawing files are not only issued as native CAD files, e.g. .dwg, .dgn, etc. but that a representative file is also issued, e.g. plot file, PDF, etc. This provides an auditable and fixed basis for the tender, and does not require the recipient to install specialist CAD software to be able to view the drawings. This also deals with any issues surrounding layer viewing in CAD files. However, it is not recommended that drawings issued for quantification purposes are issued solely as PDF

files because the PDF files created are not normally to scale, meaning any resulting measurements would suffer from obvious consequences. However, it should be noted that some measurement software allows electronic scaling and measurement of PDF drawings.

The use of industry standard formats such as XML or CITE will need some specialist support when used for the first time.

1.3 Methods of exchange

Any information to be exchanged can be transmitted using electronic media such as:

- physical media (any physical platform for holding the platform for holding the data, including CD, DVD and memory sticks);
- email; and
- web-based technology.

All the data, that in the past has been supplied in hard copy (such as bills of quantity, schedules, specifications, drawings, contracts, etc.) can now be transmitted or supplied in the electronic format in which it has been prepared.

The practical implications of choosing the means of transmission are discussed here and the technical ramifications are discussed in the next section.

Please note the advantages and disadvantages given below relate to the different electronic exchange methods and not to their relative merits over hard copy.

1.3.1 Disk

The transfer of electronic information on a disk or other physical device has the advantage of being closest to the familiar process of transferring hard copy information. The laws regarding post and other physical delivery will apply and the traditional tender opening procedures can be continued.

Advantages

- Familiarity – traditionally accepted procedures and protocols apply.
- Version and revision control are inherent in this method.
- Established legal precedence.
- Relatively secure – disks should always be sent in 'write once only' mode. (See section 2, Technology for a more detailed explanation).

Disadvantages

- Slow exchange of data based upon physical transfer such as the postal service, couriers, etc.
- Relatively expensive to reissue amended documents.

Most appropriate for

The transfer of data to disks is appropriate for any size of project, but administration costs will increase as the number of disks required to be distributed increases.

1.3.2 Email

Exchanging documents by email is now a very familiar and popular process. Email by its very nature is an informal communication medium and this militates against its proper use in formal communications such as the exchange of tender documents. The volume of email means that communications are often missed or ignored, while most organisations will limit the sizes of files that can be sent and received, which may in itself lead to further problems with the tendering process. Therefore, the use of email is not recommended as the primary means of exchanging tendering information.

Advantages

- Quick exchange of data.
- Familiar medium.
- Inexpensive.

Disadvantages

- Potential security issues.
- Informal nature of communication medium.
- Lack of inherent version and revision control.
- Needs a separate follow up communication such as a phone call to ensure that tender information has been received.
- Limits to the sizes of files that can be sent.
- Legal ambiguity concerning receipt of documents (see section 4.7 Guidance on electronic offer and acceptance).
- No sealed bid facility.

Most appropriate for

It is not recommended at all, but may be appropriate for exchanging documents to support the tender process, such as questions and queries, etc.

Email has established itself alongside the telephone, fax and post as an everyday means of business communication. Even where email is not the primary method of exchanging information electronically, email will almost always be used somewhere in administering the process. When email is used, its receipt should be confirmed either by requiring acknowledgement or phone calls. The phone calls should be noted and all emails sent and received should be filed to provide a complete record and audit trail of correspondence.

If printing, care should be taken to ensure that references to any attachments appear on the printed document.

1.3.3 Web enabled tender systems (extranets)

A web enabled tender system such as www.etenders.gov.ie or other extranet is principally a unique website enabling access to all the project team via a login name and password in order to upload and download documents.

There is currently a wide range of such services ranging from generic document management systems, to services designed specifically for the project management of construction projects. Some contain modules specifically designed for tendering.

The common feature is that documents can be lodged on a website and parties can access designated levels of information. As a result, all tenderers are looking at the same information. Generally, each tenderer has a secure area to submit their tenders. These systems can replicate the accepted tender opening process, such as controlled access and tender opening. Additionally, some systems use email to alert users of changes and unopened files, etc.

The systems are proprietary and some are subscription based. This will invariably involve some training for all participants in the tender process. Currently, clients may use www.etenders.gov.ie free of charge for publicly funded projects.

Note: The use of the internet as a means of eTendering should not be confused with online auctions, which are just one example of how this technology might be used. It is quite feasible to use the internet under more traditional tender arrangements.

Advantages

- Dynamic nature of this method, providing instant access.
- Secure systems with an electronic audit trail.
- Reduced tender administration, providing simpler processes.
- Single source, negating duplication of tender information.
- All tenderers have access to the same information.
- Version and revision control will be inherent in the system.

Disadvantages

- Mobilisation costs may be significant for some participants.
- Potential overhead due to monthly subscription cost with some systems.
- Requirement for increased technology capability, such as internet connection bandwidths, upgrades of browser software, etc.
- Proprietary systems.

Most appropriate for

Suitable for any project subject to availability of technology and acceptable subscription fee.

1.3.4 Online auctions (electronic auctions)

Online auctions are a variation of web enabled tender systems and should be used with caution. The online auctions employed in the construction industry are normally reverse auctions, where generally, the lowest price wins. In practical terms, online auctions are carried out live over the internet where all tenderers can view all bids (which are kept anonymous) with the opportunity to vary their own bid as a response to the offers made by the others within a predefined period.

Many systems enable flexibility in the configuration of the auction event, such as the ability for participants to see all or only their own bid.

Online auctions rely on a high level of technology and require participants to be well versed in the use of the particular system so that they are not disadvantaged during the limited auction time.

It should be noted that online auctions are not restricted only to price based bids. It is possible to use multiple measures, but these have to be numerically based. For example, so they could be used for time charge rates or for a percentage reduction on a standard time charge rate.

The EU directions for the use of online auctions, where the EU public procurement rules apply, are attached in Appendix A and the following should be noted:

- 1 Online auctions can be used where the contract specification can be established with precision.
- 2 The online auction shall be based either solely on prices when the contract is awarded to the lowest price, or on prices and/or features that are quantifiable and can be expressed in figures or percentages.
- 3 The tenderers should be provided with:
 - Any limits on the values which may be submitted.
 - Details of the information which will be made available to them in the course of the online auction and, where appropriate, when it will be made available to them.
 - The relevant information concerning the online auction process.
 - The conditions under which the tenderers will be able to bid and, in particular, the minimum differences which will, where appropriate, be required when bidding.
 - The relevant information concerning the electronic equipment used and the arrangements and technical specifications for connection.
 - The mathematical formula to be used to determine automatic rerankings on the basis of the new prices and/or new values submitted. That formula shall incorporate the weighting of all the criteria fixed to determine the most economically advantageous tender.

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Advantages

- Can significantly reduce the time spent negotiating tenders.
- Transparency.
- Provides earlier feedback to tenderer where they can see other bid prices.

Disadvantages

- Pressurised nature of the auction event can lead to inappropriate bids.
- Contravenes standard practice of confidentiality between individual bidder and client.
- Technology requirements may restrict participation.
- Reliance on full internet access for the entire duration of the auction period, meaning if access is lost for whatever reason, it is possible to be eliminated from the process.

Online auctions are typically used for commodity based purchases, and procuring items where there is a clear definition of specification which avoids any ambiguity (such as manufactured goods with a clearly defined specification). Most construction projects, including related professional services, fail to meet these requirements at the time of auction.

1.3.5 Choosing a method for exchanging information

Based on the methods of exchange previously discussed, the recommended methods for exchanging information are influenced by the volume of data to be exchanged rather than the complexity and/or size of the project.

2. Technology

This section is intended to offer general information rather than provide specific technical advice for each of the media types identified in the previous section. In each case, information offered is intended to help assess and select the most appropriate format.

As technology is constantly changing, it is inappropriate to provide any more than a general commentary on the main issues. However, as the use of IT generally – and the internet in particular – has become a part of everyday experience, the adoption of eTendering becomes a process change for the manager of the procurement exercise, rather than an IT implementation. The surveyor is advised to seek relevant technical advice as and when appropriate.

2.1 The impact of bandwidth

The size or volume of documentation will impact the technology used to transmit the documents electronically. Whilst connection speeds have improved significantly, the volume and size of documents (and particularly drawing files) can result in problems.

If the files are to be transferred by email then the recipient may have restrictions on the maximum file size, file type, and/or total volume of files that can be accepted. At best, this may result in a delay in receipt or at worst, files being lost. It is therefore important that these issues are checked with all recipients.

The table below illustrates the impact of bandwidth and connection speeds when exchanging information electronically. Please note that these are indicative and assume a 'perfect' connection at the stated speed. Actual performance will vary due to retries, latency, transmission protocol requirements, and other concurrent traffic.

While actual file sizes will vary, the table below illustrates the compound impact of bandwidth and data volume. The common analogy used is that of a pipe where the larger the diameter, the greater the flow rate.

In addition to file size there are implications related to file types which can also impact on both data volume and its usability, such as sending colour photographs to a tenderer who has no access to colour printing. This is why it is very important to agree the standards for the exchange of information (refer to Section 4 for further information).

Connection type	Transfer rate per 100k	Example file indicating typical file sizes		
		Drawing (1Mb)	Specification doc. (200k)	Document packages (per 10MB)
128 Kbps (ISDN-2)	9.0	93.0	18.0	15.6 min
256 Kbps	4.0	46.0	9.0	7.8 min
512 Kbps	2.0	23.0	4.0	3.9 min
1.024 Mbps	1.0	11.0	2.0	2.0 min
1.544 Mbps (DS1,T1)	0.0	7.0	1.0	1.3 min
2.048 Mbps (E1, ISDN-32)	0.0	5.0	1.0	58.0
10Mbps (10Base-T)	0.0	1.0	0.0	12.0

Notes:

1. Time format is in seconds unless otherwise stated and where 0.0 indicates that is instantaneous.
2. All times reflect download speeds only, uploading speeds will vary.
3. All download speeds have been adjusted to reflect typical performance overhead associated with normal internet use.

2.2 Physical media exchange

Popular methods of physical media exchange are disk transfer, either CD or DVD, and memory sticks. As noted previously, this is now widely accepted as a secure method of issuing electronic information and can be subject to conventional tendering procedure.

The main difference between CD and DVD technology is capacity, with DVDs able to hold more data. A CD will typically hold in the order of 600Mb and a DVD will hold in the order of 4Gb. This is particularly important with the high number of drawing and graphics files, which now make up a significant part of the tender information.

However, if using this form of media transfer, it is important to be aware that there are two main types of CD and DVD. Some CDs and DVDs offer the ability to rewrite (over write) data and others are purely write once media. It is advisable, therefore, to make certain that the media issued is 'closed' (this is usually prompted by the CD writer) ensuring that content cannot be changed. Essentially, only CD/DVD media that supports Write Once Read Many (WORM) functionality should be used, thus preventing any modification of the content that has been written to disk.

Memory sticks are available in a wide range of capacities, with 2Gb being typical. However, memory sticks cannot be write protected and as such are, therefore, not recommended.

It is good practice to check that all files copied to physical media are readable before issuing to others. This process will also highlight any missing files, such as linked documents. The importance of organising and indexing files cannot be stressed too strongly (see 4.3.1).

2.3 email

When issuing or receiving tender documents it is essential to know that it has been received and who has received it. Sending an email offers no such certainty regarding recipients, or whether it has actually been received by the person or persons intended. A simple receipt or read notification does not guarantee this and the number of emails going astray is also a concern.

One of the other key issues in the use of email is the need to keep copies of what has been sent and received and to ensure all of the emails and attachments can be retrieved for reference at a later date. This involves ensuring that back ups are made and that the back up media is stored securely. In most cases, this will form part of a wider back up and/or archiving strategy.

2.4 web-based technology

Typically referred to as the internet, extranet and/or use of portals, the web is a widely accepted means of sharing information with others. However, with any such widely used (and accessible) medium, security can be an issue (see section 3, Security). Many service providers offer 'Software as Service' (SaS) that will manage these aspects as part of the subscription fee. The service should offer a secure area for selected tenderers to access the document and to create the tender. Version and revision control will also need to be considered, and again is something that often features as part of many of the currently available systems.

The term 'portal' is typically used to describe a website that serves as a gateway to the internet, often consisting of a collection of services including email and links to other websites.

In all cases, access to web-based systems is via a web browser. Typically, this will be via Microsoft™ Internet Explorer. However, there are alternative browsers including Opera, Firefox, Safari and Google Chrome. Functionality is largely the same and it is merely a matter of preference regarding which internet browser is used. The main issue is to check that the web-based technology to be used is compatible with the internet browser (and version) to be used.

Web-based eTendering services available range from generic document management systems through add-ons, to project extranets, to purpose built tendering services. The following table gives a checklist of the features that are desirable in an eTendering service.



2.4.1 Checklist of attributes of an eTendering system

Attribute	Action
Issue logins to clients' team	Can separate logins be issued to members of the team by the eTendering manager? Can different rights be issued, e.g. allowing designers to upload drawings only, reserving the right to publish or award tenders to eTendering manager alone, etc?
Issue logins to tenderer's team	Can separate logins be issued to members of the team by the eTendering manager? Can different rights be issued, e.g. allowing designers to upload drawings only, reserving the right to publish or award tenders to eTendering manager alone etc?
Run separate PQQs, tenders, etc	Can the system facilitate the issue of several rounds of a tendering process, e.g. Pre-Qualification Questionnaire, tender, best and final offer, etc?
Tender security	Is the system security accredited? Does the system maintain security of individual tenderers responses during the tender process?
Set criteria for tender	Set return dates, times, etc. Set tender opening rules
Upload documents	Upload documents Register and describe documents
Questionnaires in the systems	Can questionnaires be set up in the system to run Pre-Qualification Questionnaires or as a technical questionnaire with the tender?
Pricing documents in the system	Can pricing documents be set up in the system?
Scoring	Can scoring frame be set up within the system to automatically score the tenders?
Use of standard documents	Can PQQs and tenders be saved as templates and edited? Can pricing documents, contract sum analyses and Bills of Quantities be imported into the system, i.e. allowing tenderer to input answers onto the system rather than uploading documents?
Tender communications	Can messages be sent within the system? Are the messages tracked and logged?
email alerts	Does the system issue alerts when revisions are made, messages are posted, etc?
Support for contractors	Is there a helpdesk for contractors?
Separate technical and commercial envelope opening	Does the system allow for the requirement for the technical requirements to be assessed before the commercial offer is opened?
Committee opening	Will the system allow for committee opening i.e. more than one person being allowed to be logged in to open the tender?
Audit log	Does the system keep a full audit log of all events in the system?
Reporting	Does the system provide reporting at all stages of the process?

3. Security

There are effectively three issues here:

- security of the file(s) being sent/exchanged;
- security of the network/communication infrastructure; and
- security of the back up/records management.

3.1 Security of file(s) being sent/exchanged

The issues surrounding the security of files apply equally to all methods of electronic transfer including disk, email and web-based technology. There are various levels of security available ranging from simple password protection to digital signatures. Essentially, the aim is to ensure that what is sent to the person or persons intended is received by the person or persons intended.

It is also important to maintain a document's integrity, i.e. the content is secure against unauthorised alteration and/or modification. It is possible to go overboard with this, and often a pragmatic approach is the best. It is also worth being aware that the widely used practice of converting word processed and spreadsheet files to PDF format does not protect the content from unauthorised modification. It is relatively easy to change and save PDF files without the author being aware. The use of PDF files should be combined with additional security measures to ensure document integrity.

To supplement these generic security issues, the use of an appropriate check procedure may also help to ensure the integrity of priced tender documents, and that documents received match those that were sent out. Typically, this technique will check to see that any quantified values have not been altered between issue and receipt of the tender documents. In a full web-based eTendering system the original document remains on the service and cannot be edited by the tenderer, any differences between documents uploaded by the tenderer and the original can therefore be identified. Furthermore in more sophisticated systems, where questionnaires and pricing documents can be created in the service, only the answers and costs are uploaded and the original questions and pricing document remains unchanged.

Some Bill of Quantities preparation software allow for locking of descriptions and quantities whilst allowing the tenderer use the same software for preparation and entry of their prices and rates and users should familiarise themselves with the secure use of such systems.

The security of the files to be exchanged may be further increased through the use of digital signatures and certificates. Digital certificates are the digital equivalent of positive identification, such as a driving licence. Issued by various certification authorities, digital certificates are used to prove that a website, or a visitor to a website, is the entity or person they claim to be.

Digital signatures, on the other hand, are like a written signature at the bottom of a page. This is a piece of code that can be attached to an email message or an online transaction to prove the identity of the person who sent the information. It is an important component for e-commerce, since it provides authentication and an increased level of security.

3.2 Security of the network/ communication infrastructure

Network/communication infrastructure security is essentially about protecting the documents in transit. Security of the network will either be the responsibility of the network/service provider where connecting to the internet, or the network and/or operating system used locally.

Files may be encrypted for secure transit. Encryption is the process of protecting information as it moves from one computer to another. Passing through a complex mathematical process (an encryption algorithm), the information is encoded before it is sent and decoded with a secret key when it is received. Without this key, the information is undecipherable. In other words, encryption is a way of making data unreadable to everyone except the receiver.

A further layer of security may be introduced through the use of a Secure Sockets Layer (SSL). This technology is used on the internet to secure web pages and transactions by means of public key cryptography. A digitally secure communications channel is established between the server and the client after which all data is encrypted. Integrity is provided by the use of digital signatures, and trust in an individual or a website is ascertained by using digital certificates which are signed by a Certificate Authority acting as a 'trusted third party'.

The eTendering infrastructure may also employ the use of a Virtual Private Network (VPN). This is a more secure public network allowing limited and controlled access to known (and approved) participants.

3.3 Security of the back up/records management

It is advisable to check that back ups extend to all tender information and related correspondence, including emails. In addition to ensuring adequate back up and archiving, it is also advisable to ensure that such material may be read in the future. In many cases, software is backwards compatible and will read data created on earlier versions of the software, although it is advisable to verify this. If in any doubt, it is still accepted practice to make a hard copy.

4. Tendering procedure

4.1 Preparation checklist for eTendering activities

The following checklist is intended to be used by the person(s) responsible for managing the tender activity. It is not exhaustive, but aims to ensure that all major issues are at least raised, so that the parties concerned can agree on the way forward.

Where the design team for the project to be tendered has already been through a process to agree information exchange protocols, such as the PIX Protocol, then most of the groundwork will have already been completed. However, where protocols for the exchange of information have not been agreed prior to commencing the process of electronic tendering, the design team should go through the simplified process outlined below to ensure that the tender information will be readily available to all parties.

Careful thought needs to be given to the use, reuse and relevance of the tender information so that each of the documents issued is in the most appropriate format for its purpose.

Note: It is important to take care that no infringement of copyright takes place when transferring documents electronically.

4.1.1 Checklist for eTendering

Item ref.	Description/content	Example
1	Determine what information/documents are required to round trip, i.e. information that is issued to the tenderers and then returned with additional information/amendments by the tenderers.	Pricing schedule
2	Determine what information/documents are only required to be one way, i.e. information that is to be issued to tenderers that will not require a return route.	Specification
3	Determine any information that will be required to be originated by the tenderer.	Contractor's proposal, health and safety policy
4	If the project team members have not already been through an information exchange process, request that all team members complete the information requirement schedule.	
5	Agree the standard file format for exchanging text documents.	MS Word, state version
6	Agree the standard file format for exchanging schedules.	MS Excel, state version
7	Agree the standard file format for exchanging drawn information.	PDF
8	Agree the standard file format for information that is to be issued as read only.	AutoCAD, state version and plot files
9	Confirm with each member of the team the file naming protocol that they will use on the project. If possible, agree a standard naming system for the project.	
10	Agree with each member of the team the protocol for revising information, especially in terms of file naming procedures.	

4.2 Preliminary enquiry

When issuing the preliminary enquiry or open invitation, it is important that the possible tenderers are informed that the tender exercise will be electronic. When using a web-based service the contractor will need to be informed how to register for the service.

The formal project information schedule should include a section that explicitly deals with the electronic tendering requirements.

The preliminary enquiry should also either contain the list of agreed file formats or request a list of file formats that the tenderer can work with. The recommended approach is to determine the file formats in the document and tell the tenderers what is expected of them.

4.3 The tender documents

This section considers the tender document index and file/document naming conventions.

4.3.1 Document index

For eTendering to be effective, all documents should be uniquely referenced and the use of a master index, allowing all participants to easily navigate and locate the tender documents, is recommended. If the tender includes any paper based information, this should be included within the index and clearly referenced in line with all other electronic documents within the tender.

Documents should be located in relevant and logical folders, e.g. by package, trade, element, etc. Figure 2 overleaf illustrates the use of folders to index the technical requirements in the tender documents issued to the tenderers.

4.3.2 Document/file naming conventions

Good file naming practice should ensure that the printed documentation can be cross-referenced to the electronic file name. File naming should remain consistent across all sources of information.

Each electronic file should be a complete document, i.e. a one hundred page specification document should be contained within a single file in multi page format, not as a collection of files each containing an individual section.

Drawing file names should contain the drawing number at all times with any revision letter added to the end of the file name. This again allows for participants to easily identify which drawing file contains which drawing.

4.4 Time for tendering

The use of eTendering should not affect the standard procedure dealing with the tender period. You are referred to the appropriate guidance for specific information in this regard.

4.5 Tender compliance

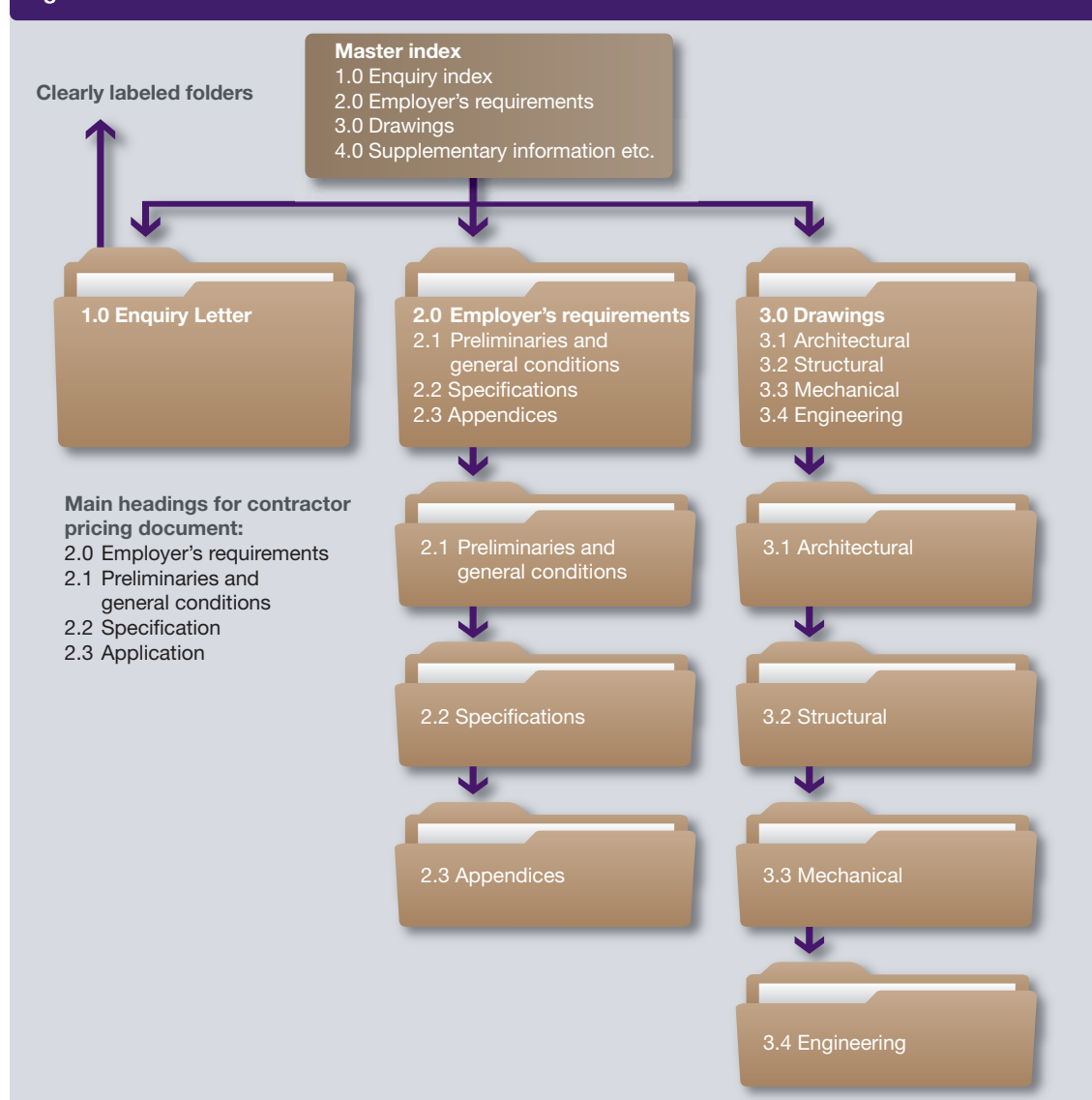
Where tenderers are unwilling or unable to comply with the requirements specified for eTendering, it is necessary to agree an appropriate form of procedure. This could either be that tenderers are disqualified from the tender process, or that agreement is reached on the alternatives to the standards specified, such as alternative file formats that are compliant with other software.

It is important to stress that general good office practice should prevail and that eTendering does not replace the need to maintain good practice. Standard checks and balances still apply, with any arithmetic errors being dealt with in the normal way.

4.6 Withdrawal of tender before acceptance

The use of eTendering should not affect the standard procedure dealing with withdrawal of tenders before acceptance. You are referred to the appropriate guidance for specific information when withdrawing tenders.

Figure 2: Index of tender documents



4.7 Guidance on electronic offer and acceptance

The actual process of entering into a contract electronically follows the same basic rules as for a written contract, where there should be an offer, an acceptance, consideration and an intention to enter into legal relations.

Sending out the tender documents will usually be an 'invitation to treat', i.e. a stage prior to the making of an offer. The individual tenders submitted are the offer. All the contract stages can be carried out electronically, using the methods described elsewhere in this guidance note. The same issues arise for each method, such as whether information has been communicated successfully and whether there is a level playing field for all tenderers? If not, assessing tenders will be much more difficult and in some cases the tender process may be invalidated. With web-based tender systems it is important to check that all tenderers have registered and that support and training is available if required.

For a one off contract, the terms and conditions should be part of the tender documents in the normal way. The 'battle of the forms', or negotiations about the exact terms of the contract can take place electronically, just as they presently do in correspondence or at meetings. The crucial point is that the contract terms last referred to will usually be the ones that apply, whether this is in an exchange of messages within a web-based tendering system, emails or in faxes and letters.

If the contract documents are highly confidential, they can be encrypted before they are sent.

The law is not clear on the exact point at which a contract is entered into electronically. In the case of email, acceptance could be at the point the email accepting the offer reaches the common server, when it reaches the other party's mailbox, or when it is actually open and read by the other party. Sometimes emails do go astray or the system fails in some way, so the terms of the contract (usually part of the invitation to tender) should be very clear as to the point at which a contract is formed. In addition, those terms should also form part of the contract. For online auctions, the rules of the auction should specify whether entering into the contract by acceptance is at the conclusion of the auction, the most successful (lowest) bid being automatically accepted, or at some other point.

If the parties plan to enter into a contract electronically, (and this can include issuing a letter of intent), it is worth considering using electronic signatures for the individuals who will be signing the contract. These will uniquely identify who has authorised or 'signed' the electronic contract, and can be supplied by 'certification service providers'.

If the contract is to be a deed, it should say so and should be signed by a director and another director or the secretary of the company. It is important to be sure that the contract is 'signed' by these specific persons, as otherwise the contract will not take effect as a deed. In theory, this could be achieved by these individuals electronically signing the tender when it is returned, but this is not entirely satisfactory, because there may be subsequent negotiations which amend the actual terms of the contract. A document which is the equivalent of the form of agreement, traditionally signed manually, will therefore be appropriate. Most people still do this by a paper copy because of the complexities of ensuring that an authorised person has sent the 'signed' document, but it is feasible to do it electronically, using authenticated electronic signatures.

Another point to check before accepting an offer is the exact name of the company which has made the offer. This could be different from the company to which the tender documents were sent. Equally, it is important to be clear what the exact name of the accepting party is. If communications are by email, rather than a traditional version of correspondence on headed notepaper, there can be doubt about the exact names of the contracting parties. Managing this within a full web-based tendering system avoids this as the participating tenders will have registered on the system, and agreed to the terms and conditions of use.

Electronic procurement makes it much easier to contract with organisations outside of the Republic of Ireland. It is worth adding a clause in the contract identifying the governing law of the contract, and whose courts are to be used in resolving any disputes. This applies if the other party is a Northern Irish entity, as well as situations where the other party is based overseas.

5. Assessing tenders and notifying results

The use of eTendering should not affect any standards adopted to assess tenders or notify results.

The electronic return of tender information should allow for more rigorous assessment of the tender returns. If the tender return data is in an agreed standard format and layout, then it should be possible for the tenders to be fully compared and contrasted. However, this benefit will only be available if standard formats are agreed and then enforced as part of the tendering process.

The web-based eTendering services should allow questionnaires and pricing documents to be set up in the system, with or without a scoring frame, this greatly enhances the tender assessment process.

Notifying of results can be carried out electronically either by the production of a schedule or other agreed practice. However, it is important to take care that there is no inadvertent disclosure of the individual bidder's prices.

It may be acceptable to use email as the notification medium as at this point in the process, the intention is to inform all of the tenderers involved in the process and to give them a clear understanding of the results. Conversely, if a web-based tendering system has been used, then posting the results on such a system would be the preferred approach.

The processes related to the examination and adjustment of tenders together with any subsequent negotiations are unaffected by the use of electronic tendering.

Appendix A: EU Directive 2004/18/EC

The coordination of procedures for the award of public works contracts, public supply contracts and public service contracts.

Article 54

Use of electronic auctions

- 1 Member States may provide that contracting authorities may use electronic auctions.
- 2 In open, restricted or negotiated procedures in the case referred to in Article 30(1)(a), the contracting authorities may decide that the award of a public contract shall be preceded by an electronic auction when the contract specifications can be established with precision.

In the same circumstances, an electronic auction may be held on the reopening of competition among the parties to a framework agreement as provided for in the second indent of the second subparagraph of Article 32(4) and on the opening for competition of contracts to be awarded under the dynamic purchasing system referred to in Article 33.

The electronic auction shall be based:

- either solely on prices when the contract is awarded to the lowest price,
 - or on prices and/or on the new values of the features of the tenders indicated in the specification when the contract is awarded to the most economically advantageous tender.
- 3 Contracting authorities which decide to hold an electronic auction shall state that fact in the contract notice.
- The specifications shall include, inter alia, the following details:
- (a) the features, the values for which will be the subject of electronic auction, provided that such features are quantifiable and can be expressed in figures or percentages;
 - (b) any limits on the values which may be submitted, as they result from the specifications relating to the subject of the contract;
 - (c) the information which will be made available to tenderers in the course of the electronic auction and, where appropriate, when it will be made available to them;
 - (d) the relevant information concerning the electronic auction process;
 - (e) the conditions under which the tenderers will be able to bid and, in particular, the minimum differences which will, where appropriate, be required when bidding;
 - (f) the relevant information concerning the electronic equipment used and the arrangements and technical specifications for connection.
- 4 Before proceeding with an electronic auction, contracting authorities shall make a full initial evaluation of the tenders in accordance with the award criterion/criteria set and with the weighting fixed for them.

All tenderers who have submitted admissible tenders shall be invited simultaneously by electronic means to submit new prices and/or new values; the invitation shall contain all relevant information concerning individual connection to the electronic equipment being used and shall state the date and time of the start of the electronic auction. The electronic auction may take place in a number of successive phases. The electronic auction may not start sooner than two working days after the date on which invitations are sent out.

- 5 When the contract is to be awarded on the basis of the most economically advantageous tender, the invitation shall be accompanied by the outcome of a full evaluation of the relevant tenderer, carried out in accordance with the weighting provided for in the first subparagraph of Article 53(2).

The invitation shall also state the mathematical formula to be used in the electronic auction to determine automatic rerankings on the basis of the new prices and/or new values submitted. That formula shall incorporate the weighting of all the criteria fixed to determine the most economically advantageous tender, as indicated in the contract notice or in the specifications; for that purpose, any ranges shall, however, be reduced beforehand to a specified value.

Where variants are authorised, a separate formula shall be provided for each variant.

- 6 Throughout each phase of an electronic auction the contracting authorities shall instantaneously communicate to all tenderers at least sufficient information to enable them to ascertain their relative rankings at any moment. They may also communicate other information concerning other prices or values submitted, provided that this is stated in the specifications. They may also at any time announce the number of participants in that phase of the auction. In no case, however, may they disclose the identities of the tenderers during any phase of an electronic auction.
- 7 Contracting authorities shall close an electronic auction in one or more of the following manners:
- a) in the invitation to take part in the auction they shall indicate the date and time fixed in advance:
 - b) when they receive no more new prices or new values which meet the requirements concerning minimum differences. In that event, the contracting authorities shall state in the invitation to take part in the auction the time which they will allow to elapse after receiving the last submission before they close the electronic auction;
 - c) when the number of phases in the auction, fixed in the invitation C to take part in the auction, has been completed.

When the contracting authorities have decided to close an electronic auction in accordance with subparagraph (c), possibly in combination with the arrangements laid down in subparagraph (b), the invitation to take part in the auction shall indicate the timetable for each phase of the auction.

- 8 After closing an electronic auction contracting authorities shall award the contract in accordance with Article 53 on the basis of the results of the electronic auction.

Contracting authorities may not have improper recourse to electronic auctions nor may they use them in such a way as to prevent, restrict or distort competition or to change the subject-matter of the contract, as put up for tender in the published contract notice and defined in the specification.

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Appendix B: Glossary

*Items marked with an asterisk are reproduced by Permission © 1994-2010 NetLingo® The Internet Dictionary at <http://www.netlingo.com>

Adobe Acrobat	Commercially available suite of software to support the creation, editing and viewing of published documents electronically.*
ADSL	Asymmetric Digital Subscriber Line: Technology allowing compressed data to be transmitted over normal telephone lines. It entails one high speed, unidirectional data channel and one low speed, bidirectional control channel (making it asynchronous).*
Bandwidth	The difference between two frequencies and the amount of information that can flow through a channel as expressed in cycles per second (hertz). It also refers to the range of frequencies (not the speed) or the measured amount of information that can be transmitted over a connection: the higher the frequency, the higher the bandwidth and the greater the capacity of a channel to carry information.*
Broadband	A high-speed, high-capacity data transmission channel that sends and receives information on coaxial cable or fibre-optic cable (which has a wider bandwidth than conventional telephone lines), giving it the ability to carry video, voice, and data simultaneously.
Browsers	A program used to view, download, upload, surf, or otherwise access documents (for example, web pages) on the internet. Netscape Navigator, Internet Explorer, Firefox, Safari and Google Chrome are well-known 'web browsers' that enable you to view and interact with websites.
CAD	Computer Aided Design refers to software used by architects, engineers, and 3D artists to visualise and manipulate the objects or spatial environments they are designing. One of the most popular of these programs is AutoCAD by AutoDesk.*
CD	Compact Disk: An optical storage medium for music or data, developed primarily for audio use by Sony in 1982.*
CITE	Construction Industry Trading Electronically: A collaborative electronic information exchange initiative for the UK construction industry where data exchange specifications are developed by the industry for the industry.
Concurrent traffic	Network and internet traffic transmitted simultaneously.
CPIC	Construction Project Information Committee: Responsible for providing best practice guidance on the content, form and preparation of construction production information, and making sure this best practice is disseminated throughout the UK construction industry.
Digital certificates	The digital sibling of an identification card, it is used in conjunction with a public key encryption system to identify a person. Digital certificates are issued by a third party (known as a certificate authority) and are included in the transmission of an encrypted message (to prove that the sender is the person he or she claims to be). A digital certificate is an important component in e-commerce and data security transmissions.*

Digital signatures	Like a written signature at the bottom of a page, this is a piece of code that can be attached to an email message or an online transaction to prove that you are the person who sent the information. Digital signatures provide authentication and an increased level of security.*
DSL	Digital Subscriber Line: A telecommunications line providing a fast and permanent connection to the internet.*
DVD	Digital Video Disc or Digital Versatile Disc: A high-density compact disk format used to store music, films, or software.*
Encryption	The process of protecting information as it moves from one computer to another. Passing through a complex mathematical process (an encryption algorithm), the information is encoded before it is sent and decoded with a secret key when it is received. Without this key, the information is undecipherable.*
Extranet	The connecting of two or more intranets, allowing users to share resources over the internet and enhance business to business communications.*
Gb	Gigabyte (abbreviated as Gb): A unit of measurement approximately equal to one billion bytes. A gigabyte is used to quantify memory or disk capacity. One gigabyte equals 1,000Mb (actually 1,024 megabytes).*
Intranet	An organisation's internal website, allowing users inside the organisation to communicate and exchange information.
ISDN	Integrated Services Digital Network: One of the fastest commercially available connections to the internet, it is a set of communications standards that enables a single wire (or optical fibre) to carry voice, data, and video. It gives a user up to 56k of data bandwidth on a phone line (when also used for voice) or up to 128 Kbps if the line is only used for data. ISDN is intended to replace eventually the 'plain old telephone system' (POTS), and it mostly uses existing Public Switched Telephone Network (PSTN) switches and wiring, upgraded so that the basic 'call' is carried on a channel which is digital, from end to end.*
Latency	The time that elapses between a network request and the moment that request is met. In networking, latency and bandwidth are the two factors that determine the speed of your connection; latency refers to the time it takes for a data packet to move across a network connection.*
Mb	Megabyte (abbreviated as Mb): One million bytes or one thousand kilobytes.*
Modem	Short for: Modulator, DEModulator: A hardware device you connect to your computer and to a phone line. It enables the computer to talk to other computers through the phone system. Basically, modems do for computers what a telephone does for humans. Generally, there are three types of modem: external, PC card, and internal. Most computers now have internal modems so you can plug the telephone cord directly into the back of the computer.*
PDF	Portable Document Format: The file format for documents viewed and created by Adobe Acrobat software. This technology has succeeded in standardising the format of documents used and transferred electronically.*
PIX	Project Information eXchange Protocol.
Plot files	Drawing files produced by CAD software.

Portal

A website that serves as a starting point to other destinations or activities on the web. Initially thought of as a home base with links to other sites in the same subject area, portals now attempt to provide all of a user's internet needs, in one location. Pioneered by Yahoo!, portals aggregate other people's content. For example, portals commonly provide services such as email, online chat rooms, games, shopping, searching, content, newsfeeds, travel information, stock quotes, horoscopes, weather, and the like.*

Project information schedule

Schedule of project information and formats.

SDSL

Symmetrical DSL: A telecommunications line where download and upload speeds are similar.*

SSL

Secure Sockets Layer: A protocol that delivers server authentication, data encryption, and message integrity.*

Transmission protocol

A specification that describes how computers talk to each other on a network or over the internet.*

VPN

Virtual Private Network: A secure private network that uses the public telecommunications infrastructure to transmit data. In contrast to a much more expensive system of owned or leased lines that can only be used by one company, VPNs are used by enterprises for both extranets and wide area intranets. Using encryption and authentication, a VPN encrypts all data that passes between two internet points, maintaining privacy and security.*

XML

eXtensible Markup Language: A markup language/specification developed specifically for web documents. It enables web authors and developers to create their own customised tags to provide functionality not available with HTML. For example, XML supports links that point to multiple documents (as opposed to HTML links, which can reference just one destination each).*

web-based technology

product or service that can be executed or delivered over the internet, such as a banking transaction.

WORM

Write Once Read Many: A term usually associated with data stored on electronic media, i.e. CD or DVD, preventing any modification of the content once written.*

Dating back to 1895, the Society of Chartered Surveyors www.scsi.ie Ireland is the independent professional body for Chartered Surveyors working and practicing in Ireland.

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Advancing standards in construction, land and property, the Chartered Surveyor professional qualification is the world's leading qualification when it comes to professional standards. In a world where more and more people, governments, banks and commercial organisations demand greater certainty of professional standards and ethics, attaining the Chartered Surveyor qualification is the recognised mark of property professionalism.

Members of the profession are typically employed in the construction, land and property markets through private practice, in central and local government, in state agencies, in academic institutions, in business organisations and in non-governmental organisations.

Members' services are diverse and can include offering strategic advice on the economics, valuation, law, technology, finance and management in all aspects of the construction, land and property industry.

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