

CODE MODIFICATION PROPOSAL No 0325V
Code Governance Review:
DN Transportation Charging Methodology and Change Governance
Version 1.0

Date: 21/10/2010

Proposed Implementation Date: 31/12/2010

Urgency: Non Urgent

1 The Modification Proposal

a) Nature and Purpose of this Proposal

Background

In November 2007, Ofgem announced the Review of Industry Code Governance, which concluded at the end of March 2010 when Ofgem published their Final Proposals for the Code Governance Review (CGR). The Ofgem Final Proposals covered the following work strands:

- Significant Code Review and Self-governance;
- Charging Methodologies;
- Environmental Assessment and Code Objectives ;
- Role of Code Administrators and small participant and consumer initiatives; and
- The Code Administration Code of Practice (subset of the above code administrators proposals).

The licence modifications necessary to implement the Final Proposals for the Code Governance Review and the Code Administration Code of Practice were published on 3 June 2010 and become effective on the 31 December 2010.

This Modification Proposal aims to implement the conclusions of the Code Governance Review Final Proposals in respect of Charging Methodologies¹, specifically in respect of the new Gas Transporter Licence requirements contained in:

- Standard Special Condition A11 (6)(e) which requires the licensee to have prepared a uniform network code setting out the UNC charging methodologies;

¹http://www.ofgem.gov.uk/Licensing/IndCodes/CGR/Documents1/CGR_Finalproposals_310310.pdf
pages 30 – 36 (inclusive)

- Standard Special Condition A5 (5) which details the ‘relevant methodology objectives which a relevant modification must better facilitate;
- Standard Special Condition A11 (9)(ab)(ii) which requires the modification procedures provide that any proposal to modify the UNC Charging Methodologies must permit compliance with paragraphs 2, 2A and 3 of Standard Special Condition A4 of the Gas Transporter Licences;
- Standard Special Condition A11 (9)(ac) which requires:
 - the regular convening of the charging methodology forum; and
 - the provision by the licensee of information reasonably requested by a Materially Affected Party; and
- Standard Special Condition A11 (10)(ab) which states that a Modification Proposal in respect of a UNC Charging Methodology may only be made by a UNC signatory or a Materially Affected Party (being a person or class of persons designated by the Authority for this purpose).

Proposal

To facilitate the delivery of the above new licence conditions specific to the DNO Gas Transporter Licences, it is proposed that:

- the prevailing Distribution Network Transportation Charging Methodologies² (as at the date of implementation, if so directed) are incorporated within the Uniform Network Code; and
- the UNC Modification Rules are amended to reflect that
 - the Transporters must convene meetings (not less frequently than every three months, unless there is no matter to discuss) of the charging methodology forum (as defined in Standard Special Condition A11 (24) of the Gas Transporter Licences) being the ‘DN Charging Methodology Forum’. It is proposed

² For the avoidance of doubt, this applies solely to the DNOs Transportation Charging Methodologies. The governance of the Distribution Connection Methodologies is outside the scope of the CGR Final Proposals and this Proposal.

³ Workstream will be superseded by Workgroup in the event of implementation of UNC Modification Proposal 0319.

⁴ Chairman’s Guidelines will be superseded by the Code Administration Code of Practice in the event of implementation of UNC Modification Proposal 0319.

that this Forum shall be defined as a UNC Workstream³ (defined within the current UNC Modification Rules) other than this Forum shall comprise of representatives of Materially Affected Parties, Users and Transporters.

- This Forum will operate in accordance with the Chairman's Guidelines⁴ and may not be dissolved. This Forum will be convened for the general purposes of discussing the further development of the applicable Charging Methodologies (and other charging related matters by agreement) in accordance with its Terms of Reference (which group shall have no power or authority to bind any User or any Transporter).

To facilitate the delivery of the above new licence conditions common to both the DNO Gas Transporter Licences and the NTS Gas Transporter Licence, it is proposed that the UNC Modification Rules are amended to reflect that:

- insofar as reasonably practicable, the relevant Transporter will provide information or assistance (for the purpose of preparing a proposal to modify a Charging Methodology in respect of its network) reasonably requested by a Materially Affected Party;
- a Modification Proposal in respect of a Charging Methodology may only be made by a UNC signatory or a Materially Affected Party (being a person or class of persons designated by the Authority for this purpose);
- that Proposer of a Modification Proposal in respect of a Charging Methodology state its opinion as to why it believes that the proposal does not conflict with paragraphs 2, 2A and 3 of Standard Special Condition A4 of the Gas Transporter Licences;
- at initial discussion of a Modification Proposal in respect of a Charging Methodology, the Modification Panel consider whether the proposal conflicts with paragraphs 2, 2A and 3 of Standard Special Condition A4 of the Gas Transporter Licences;
- that the Modification Report incorporate a view as to whether a Modification Proposal in respect of a Charging Methodology conflicts with paragraphs 2, 2A and 3 of Standard Special Condition A4 of the Gas Transporter Licences; and
- the wording in sub section (a) of the definition of "Relevant Objectives" within section 2.1 of the UNC Modification Rules alternatively refers to the relevant objectives in Standard Special Condition A11(24a).

The above six elements generic to both DNO and NTS Gas Transporter

Licences are advocated by both this Proposal and Modification Proposal 0322. This enables each Proposal to be implemented in isolation if so directed.

b) Justification for Urgency and recommendation on the procedure and timetable to be followed (if applicable)

It is not proposed that this proposal is subjected to Urgent procedures.

c) Recommendation on whether this Proposal should proceed to the review procedures, the Development Phase, the Consultation Phase or be referred to a Workstream for discussion.

Following the extensive industry debate and discussions undertaken in respect of the Review, the proposer believes that this Proposal is sufficiently developed in order for it to proceed to consultation.

2 User Pays

a) Classification of the Proposal as User Pays or not and justification for classification

This Proposal is not classed as a User Pays Proposal as it does not create or amend any User Pays services.

b) Identification of Users, proposed split of the recovery between Gas Transporters and Users for User Pays costs and justification

Not applicable.

c) Proposed charge(s) for application of Users Pays charges to Shippers

Not applicable.

d) Proposed charge for inclusion in ACS – to be completed upon receipt of cost estimate from xoserve

Not applicable.

3 Extent to which implementation of this Modification Proposal would better facilitate the achievement (for the purposes of each Transporter's Licence) of the Relevant Objectives

This Proposal is raised in accordance with paragraph 1c of Standard Special Condition A11. Network Code and Uniform Network Code. The Proposer feels that the Proposal better facilitates the efficient discharge by the licensee of the relevant obligations (as detailed in section 1) imposed upon it following the Ofgem Code Governance Review, under paragraph 6, 9 and 10 of Standard Special Condition A11. 'Network Code and Uniform Network Code', of the Gas Transporters' Licence.

One of the key aims of the new licence conditions is to seek to ensure that the

governance processes are more transparent and accessible, which was particularly seen as important for small participants and consumer groups. Given that at present DN charging methodologies are not subject to Code Governance (and therefore Shipper Users are not able to raise specific Modification Proposals to that Methodology) it may be argued that permitting such parties to do so may better facilitate the securing of effective competition between relevant shippers (Standard Special Condition A11 (1)(d)).

In respect of the aspects of this proposal relating to changes to the UNC Modification Rules, as such changes seek to implement relevant new requirements of paragraphs 9 of Standard Special Condition A11 of the DN Licence we believe that implementation of this proposal would better facilitate the relevant objectives as per Standard Special Condition A11 (2).

4 The implications of implementing this Modification Proposal on security of supply, operation of the Total System and industry fragmentation

No such impact has been identified.

5 The implications for Transporters and each Transporter of implementing this Modification Proposal, including:

a) The implications for operation of the System:

No such impact has been identified.

b) The development and capital cost and operating cost implications:

The level of impact on operational costs is dependant on the additional volume of Modification Proposals (related to DNO charging methodologies) and associated governance activity that may transpire as a consequence of implementation of this Proposal. Accordingly it is unclear whether existing resource dedicated to management of governance arrangements will be sufficient.

c) Whether it is appropriate to recover all or any of the costs and, if so, a proposal for the most appropriate way for these costs to be recovered:

No additional cost recovery is proposed at present.

d) The consequence (if any) on the level of contractual risk of each Transporter under the Uniform Network Code of the Individual Network Codes proposed to be modified by this Modification Proposal

The proposer believes that a DNO's contractual risk would increase as a consequence of implementation in that they will no longer have sole control of change proposals to their respective charging methodologies which at present are not incorporated into the UNC.

- 6 The extent to which the implementation is required to enable each Transporter to facilitate compliance with a safety notice from the Health and Safety Executive pursuant to Standard Condition A11 (14) (Transporters Only)**

Implementation is not required to enable such compliance.

- 7 The development implications and other implications for the UK Link System of the Transporter, related computer systems of each Transporter and related computer systems of Users**

Minor changes to the Joint Office of Gas Transporters website may be required.

- 8 The implications for Users of implementing the Modification Proposal, including:**

- a) The administrative and operational implications (including impact upon manual processes and procedures)**

The proposer is not specifically aware of any such implications.

- b) The development and capital cost and operating cost implications**

The proposer is not specifically aware of any such implications.

- c) The consequence (if any) on the level of contractual risk of Users under the Uniform Network Code of the Individual Network Codes proposed to be modified by this Modification Proposal**

As Users currently do not have the ability to raise direct change proposals to the DN Charging Methodologies it could be argued that a User's contractual risk associated with Charging Methodologies over which it currently has no direct influence may be reduced.

- 9 The implications of the implementation for other relevant persons (including, but without limitation, Users, Connected System Operators, Consumers, Terminal Operators, Storage Operators, Suppliers and producers and, to the extent not so otherwise addressed, any Non-Code Party)**

Those parties that can demonstrate to the Authority that they are a 'Materially Affected Party' (as per Standard Special Condition A11 (24) of the DN Licence) will be able to raise change proposals to DN Charging Methodologies.

- 10 Consequences on the legislative and regulatory obligations and contractual relationships of the Transporters**

This Proposal seeks to implement relevant regulatory obligations in the UNC.

- 11 Analysis of any advantages or disadvantages of implementation of the Modification Proposal not otherwise identified in paragraphs 2 to 10 above**

Advantages

- provides greater transparency of the relevant DN Charging Methodologies.

Disadvantages

- potentially increases risk and uncertainty to the long term planning of a stable pricing regime.

12 Summary of representations received as a result of consultation by the Proposer (to the extent that the import of those representations are not reflected elsewhere in this Proposal)

No such representations have been received.

13 Detail of all other representations received and considered by the Proposer

No such representations have been received.

14 Any other matter the Proposer considers needs to be addressed

No additional matters have been identified.

15 Recommendations on the time scale for the implementation of the whole or any part of this Modification Proposal

It is proposed that in the event of the appropriate direction from the Authority that this Proposal is implemented on 31 December 2010.

16 Comments on Suggested Text

17 Suggested Text

UNIFORM NETWORK CODE

MODIFICATION 0325

CODE GOVERNANCE REVIEW: DN TRANSPORTATION CHARGING METHODOLOGY

Draft [legal text]

TPD

Insert text to create a new section within TPD to read as follows:

SECTION Y: CHARGING METHODOLOGIES

PART B - DN TRANSPORTATION CHARGING METHODOLOGY

[Insert document contained within Annex A "Gas Distribution Transportation Charging Methodology"]

MODIFICATION RULES

Add new paragraph 1.4 to read as follows:

1.4 Materially Affected Party

The Transporters shall provide, to the extent that is reasonably practicable, in relation to a Modification Proposal that includes a proposed modification to Section Y, such information reasonably required by a Materially Affected Party in respect of the proposed modification.

Add the following defined terms at paragraph 2.1:

"DN Charging Methodology Forum": means a Workstream comprised of representatives of Materially Affected Parties, Users and Transporters, chaired by a representative of the Transporters⁵ and operating within the Chairman's Guidelines⁶, which is convened for the general purposes of consideration and discussion of matters relating to Part B of Section Y or Modification Proposals in respect of Part B of Section Y in accordance with its Terms of Reference (which group shall have no power or authority to bind any Materially Affected Party, User or Transporter);

"Materially Affected Party": has the meaning given in Standard Special Condition A11(24) of the Transporter's Licence;

Amend paragraph 2.1 to read as follows:

"Chairman's Guidelines"⁷: a set of standing guidelines issued by the Transporters governing the conduct of meetings of the Modification Panel, Workstreams, Development Work Groups, DN Charging Methodology Forum and Review Groups, as amended from time to time by Panel Majority;

"Relevant Objectives": ~~means:~~ has the meaning given in

(a) ~~the relevant objectives in~~ Standard Special Condition A11(~~24~~) of the

⁵ Comment: if modification 319 on the Code of Practice is implemented the reference to Transporters will need to be changed to Code Administrator.

⁶ Comment: if modification 319 on the Code of Practice is implemented the reference to the Chairman's Guidelines will need to be changed the Code of Practice.

⁷ Comment: if modification 319 on the Code of Practice is implemented this definition will be deleted.

Transporter's Licence; and

- ~~(b) in relation to a proposed Modification of these Rules, the requirements in Standard Special Conditions A11(9) and (12) (to the extent that they do not conflict with the relevant objectives referred to in (a) above);~~

“Workstream”:

- (a) a group comprised of representatives of Users and Transporters chaired by a representative of the Transporters and operating within the Chairman's Guidelines, which is convened for the general purposes of consideration and discussion of matters relating to the Uniform Network Code, an Individual Network Code or a Modification Proposal in accordance with paragraph 7.4 in accordance with its Terms of Reference (which group shall have no power or authority to bind any User or any Transporter); or
- (b) a DN Charging Methodology Forum, in respect of a Modification Proposal which proposes a modification to Part B of Section Y.

Amend paragraph 5.1.2(b) to read as follows:

Workstreams other than the DN Charging Methodology Forum may be created or dissolved by Panel Majority.

Amend paragraph 6.1.1 to read as follows:

6.1.1. Without prejudice to paragraph 6.4 or paragraph 12.4 in respect of the Uniform Network Code may be made from time to time by:

- (a) a Transporter; and/or
- (b) any User;
- (c) in the case only of a Modification Proposal which proposes a modification to Section Y, a Proposer that is the Materially Affected Party;

and any Third Party Participant may make a Third Party Modification Proposal.

Amend paragraph 6.1.2 to read as follows:

6.1.2 Without prejudice to paragraph 6.4 or paragraph 12.4 a Modification Proposal in respect of an Individual Network Code may be made from time to time by:

- (a) a Relevant Transporter; and/or
- (b) any Relevant Shipper; and/or
- (c) in the case only of a Modification Proposal which proposes a modification to Section Y, a Proposer that is the Materially Affected

Party.

Amend paragraph 6.2.1 to read as follows:

6.2.1 ...

(j); ~~and~~

(k); and

(l) in the case of a Modification Proposal which proposes a modification to Part B of Section Y, shall state the Proposer's opinion why the Modification Proposal does not conflict with paragraphs 2, 2A and 3 of Standard Special Condition A4 of the Transporter's Licence.

Amend paragraph 7.2.2(a) to add a new sub-paragraph (v) as follows:

(iii); ~~and~~

(iv); ~~or~~ and

(v) considered whether a Modification Proposal in respect of Part B of Section Y conflicts with paragraphs 2, 2A and 3 of Standard Special Condition A4 of the Transporter's Licence; or

Amend paragraph 9.4.1 to add a new sub-paragraph (u) as follows:

(t); or

(u) where it is a Modification Proposal in respect of Part B of Section Y, state the view of the Modification Panel as to whether the Modification Proposal conflicts with paragraphs 2, 2A and 3 of Standard Special Condition A4 of the Transporter's Licence.

Add new paragraph 12.10 to read as follows:

12.10 DN Charging Methodology Forum

The Transporters shall ensure the DN Charging Methodology Forum meets on a regular basis, for which purpose the Secretary shall convene a meeting of such forum by notice to its members at least once every three (3) months unless there is no matter for the DN Charging Methodology Forum to discuss.

GT SECTION C – INTERPRETATION

Amend paragraph 1 to read as follows:

"Transportation Statement": means the prevailing statement furnished by the Transporter to the Authority under Standard Special Condition A4 of the Transporter's Licence and in respect of which the methodology referred to in paragraph 5 of that condition is set out in TPD Section Y.

Code Concerned, sections and paragraphs

Uniform Network Code

Transportation Principal Document

Section(s)

Proposer's Representative

Chris Warner (National Grid Distribution)

Proposer

Chris Warner (National Grid Distribution)

Annex A

[Note that the following Methodology (which is comprised within the suggested text of this Proposal) may be subject to change prior to the submission of the text of the Modification which will be prepared by the proposer pursuant to a request for such received from the Authority (pursuant to the UNC Modification Rules section 9.6.1(b)(ii)].

GAS DISTRIBUTION TRANSPORTATION CHARGING METHODOLOGY

1. Introduction

Gas distribution transportation charges consist of:

- LDZ System charges;
- Customer charges;
- Administration charges.

For transportation to Supply Points directly connected to the distribution system the LDZ System, Customer and Administration charges are applicable. For transportation to Connected System Exit Points (CSEPs) the LDZ System and Administration charges are applicable.

The LDZ System charges and the Customer charges are set so as to maintain the proportional split of revenue recovery between them determined by the methodology. The levels of these charges are scaled proportionately to recover the target level of revenue. The levels of the Administration charges are based on the costs of providing the services and these charges are not scaled to recover any given proportion of the targeted revenue.

2. Split of revenue recovery between LDZ System and Customer Charges

The target balance of revenue recovery between LDZ System charges and Customer charges for each DN is based upon a network-specific analysis of the split of relevant costs. The costs are taken from the regulatory reporting packs submitted to Ofgem.

Customer charges reflect costs relating to service pipes funded by the transporter and the costs of emergency work relating to service pipes and supply points (i.e. not including any costs associated with gas mains). Service pipe costs include all operational and depreciation costs associated with DN-connected service pipes; these costs also include the replacement of such pipes and service pipe leakage. The relevant portion of support, employee overheads and work management costs of supporting Customer cost activities, based on direct work activity costs are attributed to the Customer cost category.

LDZ System charges reflect costs which include the cost of all work relating to assets upstream of the service pipe (including the gas mains to which the service pipes are connected) and those costs associated with managing the flow of gas through the system including capacity management. Accordingly, costs for all activities upstream of service pipes relating to the maintenance, replacement and repair of mains and larger pipes, as well as energy management work and the construction of new pipes are included in this cost category. The relevant portion of support, employee overheads and work management costs of supporting LDZ System cost activities, based on direct work activity costs are attributed to the LDZ System cost category. Depreciation costs associated with gas mains and Local Transmission System (LTS) pipes and LDZ System activity assets are attributed to the LDZ

System cost category. All odorant and shrinkage costs except for service pipe leakage are attributed to the LDZ System cost category.

The network-specific estimate of the split of relevant costs is assessed using an average of an appropriate number of years for which data on a consistent basis is available for each network.

The current target revenue recovery splits are as shown in the table below.

Target Revenue Recovery Split between LDZ System and Customer Charges

	LDZ System	Customer
East of England	70.5%	29.5%
London	68.1%	31.9%
North West	73.7%	26.3%
West Midlands	74.0%	26.0%
Scotland Gas Networks	71.2%	28.8%
Southern Gas Networks	72.8%	27.2%
Northern Gas Networks	71.2%	28.8%
Wales & West	71.8%	28.2%

3. Split of revenue recovery between LDZ System Capacity and Commodity Charges

The capacity element of the LDZ System charges is targeted to recover 95%, and the commodity element of the LDZ System charges is targeted to recover 5%, of the revenue from the LDZ system charges. This split is based on an assessment of the extent to which LDZ System associated costs are related to throughput or to system capacity. The 95:5 split applies to all the DNs.

4. Standard LDZ System Charges

The distribution networks contain a series of pipe networks split into four main pressure tiers - Local Transmission System (LTS), Intermediate Pressure System (IPS), Medium Pressure System (MPS) and Low Pressure System (LPS). Because it accounts for the majority of the total system costs the LPS is then sub-divided on the basis of pipe diameter into a further six sub-tiers.

All LDZ System related costs are attributed across these pressure tiers and sub-tiers.

The methodology below describes the derivation of the capacity charge function and is based on peak daily flows. A similar calculation, based on annual flows, is carried out to determine the commodity charge function

The average cost of utilisation is calculated for each of the main pressure tiers of the system. The probability of a load within a consumption band using any given pressure tier is determined by an analysis of where supply points of different sizes tend to connect to the system. Combining the average cost of utilisation with the probability of connection generates a tier charge for an average load within any given band. These tier charges are added together to give the total relative charge for a load within the consumption band to use the system.

To provide a workable basis for charging individual customers of differing sizes, the total average unit costs of utilising each tier of the distribution network are plotted. Functions are fitted to the data points representing the total unit costs such that the overall measure of error is minimised.

For the purposes of deriving charging functions the data points for the consumption bands are grouped into 3 charging bands:

- For the 0 to 73.2 MWh/a charging band a fixed unit charge is determined. The rate applies to directly connected Supply Points and CSEPs;
- For the 73.2 to 732 MWh/a charging band a fixed unit charge is determined. The rate applies to directly connected Supply Points and CSEPs;
- For the 732 MWh/a and above charging band, functions based on a power of the peak daily load (SOQ) are fitted. There are separate power functions for directly connected Supply Points and for CSEPs as the cost data justified separate functions for the >732 MWh charging band.

The form of the LDZ System functions is currently derived on a national basis.

5. Standard LDZ System Charges for Interruptible Supply Points

The Standard LDZ System charges for interruptible Supply Points are based on the principle that interruptible Supply Points typically receive a discount of 50% on the standard LDZ System charges they would pay if they were Firm.

Prior to 1st October 2011, this means interruptible Supply Points pay 47.37% of the appropriate LDZ System Capacity charge which would apply if the Supply Point were firm plus the appropriate LDZ System Commodity charge.

On and after 1st October 2011 all Supply Points will pay firm capacity and commodity charges.

Prior to 1st October 2011, where the transporter requires a Supply Point to be interrupted for more than 15 days in a particular year there is a transportation charge credit. For each day of interruption over 15 days, a transportation charge credit equivalent to 1/15 of the annual LDZ standard capacity charge avoided by having interruptible rather than firm transportation is payable to the Shipper User.

From 1st October 2011 transportation credits in respect of interruption will cease.

6. Optional LDZ System Charge

The rationale for the Optional LDZ System charge is that, for large DN-connected loads located close to the NTS, the standard LDZ System charges can appear to give perverse economic incentives for the construction of new pipelines to supply loads that are already connected to the transportation system, or for potential new loads to build lengthier and costlier pipelines than are available via nearby DN connections. This may give rise to economically inefficient bypass of the Distribution Network system, and unnecessary duplication of infrastructure.

The level of the Optional LDZ System charge is based on the estimated costs to the Distribution Network of laying and connecting a dedicated pipeline for a range of flow rates and distances from the NTS.

The costs considered in deriving the Optional LDZ System charge include the capital cost of laying the hypothetical pipeline and other capital costs relating to connection, metering, volumetric control and other requirements, and the ongoing direct and indirect costs of the hypothetical pipeline.

The level of the Optional LDZ System charge is independent of the overall level of revenue recovery targeted and so the level of the charging function remains unchanged until its cost basis is reanalysed.

Shipper Users opting for the Optional LDZ System charge pay this charge instead of the Standard LDZ System capacity and commodity charges.

7. Customer Charges

Customer charges reflect Supply Point costs, primarily costs relating to service pipes and emergency work relating to service pipes and supply points. The customer charge methodology is based on an attribution of the costs across Supply Points grouped into a number of consumption bands.

The costs are made up of two cost pools, broadly comprising costs associated with service pipes and costs associated with emergency work. Each cost pool is then divided among the consumption bands based on weighted consumer numbers by consumption band. The weightings are derived from estimates of how the costs of providing each of the services vary with consumption band. A total average cost per Supply Point is then calculated for each consumption band.

Functions are developed that best fit the relationship between supply point size and total average cost per supply point. The peak supply point capacity (SOQ) is used as a measure of supply point size.

For Supply Points up to 73.2 MWh/a, the Customer charge is a fixed unit capacity charge.

For Supply Points between 73.2 and 732 MWh/annum, the Customer charge consists of a fixed daily charge which varies with meter-reading frequency and a fixed unit capacity charge.

For Supply Points in excess of 732 MWh/annum, the Customer charge is a capacity charge whose unit rate is determined by a function based on a power of the peak daily load (SOQ).

8. Administration Charges

There are specific administration charges for some services which are required by some Shipper Users but not by all. These administration charges are:

- Charges for the administration processes required to manage the daily operations and invoicing associated with CSEPs;
- Charges for the administration of allocation arrangements at Shared Supply Meter Points.

The methodology used to calculate the appropriate level of these charges is based on an assessment of the costs incurred of the ongoing activities involved in providing the services. The charges are forward looking and take into account anticipated enhancements to the methods and systems used.