Committee: E-Government Working Group

Date: 7 October 2004

Agenda Item No: 7

Title: e-Authentication

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Summary

1   This report advises Members of the need for online registration and authentication systems in order to meet the various national E-Government targets. The report recommends utilising the Government Gateway solution and making suitable provision for the related costs in the 2005/06 budget.

Background

2   As Members are aware, 100% of all council services should be available electronically by 31 December 2005. For Uttlesford, this amounts to some 600 different service interactions with the public. For a number of these interactions, it is essential that the physical or 'real world' identity of the service user is established beyond reasonable doubt. Examples of such interactions would include:

- Online access to personal information about a citizen, such as council tax account details, housing benefit entitlement etc.

- Online submission of claims and applications where, had the transaction been carried out in a traditional way, a signature would have been required. Examples would include submitting a claim for housing benefit or renovation grant, applying for council housing or submitting a planning application.

3   These types of interactions require a level of identity authentication in the 'online' world" that is equivalent to that commonly accepted in the 'real' world. Governments and businesses have found this concept challenging as the typical means of authentication in the real world (e.g. driver's licence, passport, notarised signatures etc) no longer apply.

4   There are two key elements to establishing the 'real world' identity of a citizen when using online services:

Registration: This is the process by which a user gains a credential such as a username or digital certificate for subsequent authentication. This may require the user to present proof of real-world identity (such as birth certificate or passport) and/or proof of other attributes depending on the intended use of the credential (*e.g.* proof that an individual works for a particular organisation).

Authentication: The process by which the electronic identity of a user is validated for a specific occasion, using a credential issued following a registration process. Typically, the user will be required to establish that they are the true holder of a credential, by means of a password or similar security feature (such as a biometric test). The purpose of authentication is to ensure that the person accessing a system, or carrying out an online transaction, is who they claim to be. Authentication protects the user, by ensuring that access to their personal information, which could be confidential or sensitive, is restricted.

5   Earlier this year, Uttlesford led a strategy study on behalf of the Essex Online Partnership (EOLP) to determine the best way to approach this issue. The recommendations, which were accepted by the partnership were:

- Utilise the national Government Gateway system for the registration and authentication of online interactions in Essex. The Gateway was established for the online delivery of central government services, such as the submission of self-assessment income tax returns and VAT returns. However, it was established during the study that the Gateway could now be utilised by local government as well.

- Purchase a DIS box (the hardware needed to connect to the Gateway) either for the whole EOLP partnership, or for smaller groups of partners. Such an approach would reduce costs and ensure that expertise and knowledge is shared. It was subsequently agreed that a single solution would be pursued for the whole of Essex.

- Use the national ESD toolkit to determine, for each transaction, the level of trust, and consequent level of security, that is required. The higher the trust that is required in the real world identity of a user, the greater the need to ensure that the user is who they say they are. For example, a breach in security relating to the issuing of a fire arms certificate would have potentially far greater consequences than for a breach relating to personal council tax account information. The Gateway can be used to apply different levels of trust to different transactions.

- Carry out a detailed option appraisal to determine from which supplier the DIS box should be purchased.

6   The DIS Box Options Appraisal has been carried out, led by staff from the EOLP Programme Office. A copy of the report is attached for information as Appendix One. Also attached (as Appendix Two) is an addendum, dated 22 September 2004, providing more up-to-date estimates of the costs involved. These estimated costs can be summarised thus:

Project Costs	£
Initial installation of central DIS environment (shared cost)	81,000*
EOLP ~ Project management and technical consultancy (shared costs)	35,000*
Total estimated shared costs * the cost to individual partners will depend upon the number of partners taking part in the project	116,000
Integration (maximum cost per partner, per service) * plus transaction charges dependent upon volume	30,000*
Annual Costs Government Gateway * plus transactional charges. These vary between 3p and 9p per e-payment, and up to 24p per online authentication, dependent upon volume (the greater the volume, the lower the charge).	5,000*
First line IT support and hardware / software support for Central DIS environment (shared cost)	4,500
EOLP test / live DIS environment manager (shared cost)	5,000
Annual Costs, excluding transactional charges	14,500

7   After subsequent discussions with EOLP Partners, it was agreed that a formal tender exercise be carried out, inviting all existing DIS box suppliers to submit bids. This exercise will begin shortly.

8   Since the options appraisal was carried out, informal consultation has taken place with the IDeA Support Unit. A verbal update on these discussions will be given at the meeting.

Conclusion

9   The provision of robust and secure online registration and authentication systems are essential to the on-going development of electronic services and the fulfilment of the BVPI 157 target. It is therefore recommended that:

1   Uttlesford agrees to participate in the EOLP project and

2   Suitable budget provision is made for 2005/06.

Background Papers: Essex Online Partnership: Strategy Study: Registration and Authentication Services

Appendix One

DELIVERABLE

RECOMMENDATIONS ON GOVERNMENT GATEWAY

e-Authentication

Release: Draft J
Date: August 2004

PRINCE 2

Author: Gordon Kerr

Owner: Gordon Kerr

Client: Malcolm Cheshire for EOL E-Champions

Document Number: tba

Brief Summary

This report recommends that a single minimum-sized "DIS" system be installed to serve the whole Essex Online Partnership's needs for connectivity to the Government Gateway, using the Essextranet for communication between the shared DIS and partners' individual business systems. It is also recommended that a separate test DIS system be installed and used for test/development purposes.

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It is further recommended that the DIS be installed and commissioned in the standard configuration in terms of the interchange of messages to partners' systems (ie using only standard GovTalk protocols), with any adaptation required being handled within partner's own environments.

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Recommendations on Government Gateway

Executive Summary

The Essex Online Partnership has already agreed in principle to investigate the opportunities offered by connecting in to the Government Gateway. In order to expedite partners' ability to exploit services available from the Government Gateway, the Essex Online Partnership can efficiently share the costs of installing and supporting a single minimum-sized accredited live "DIS" (Departmental Interface Server) capability for all partners, for all foreseeable business that partners may wish to fulfil using Government Gateway services. Such services include e-payments and formal authentication of citizens in an online (or similar) environment where it is important from a confidentiality point of view to be able to be sufficiently sure of a user's identity before proceeding with an online session.

The centralised shared DIS will communicate over the Essextranet to partners' individual back-end business systems (such as Cash Receipting Reconciliation, Revenues/Benefits etc). The current capacity and security of the Essextranet will be more than adequate for these communications. Furthermore it is recommended that a minimum-sized live/production DIS will be able to handle all the traffic that will be generated by the Partnership.

Whilst the "DIS" capability can be configured with additional "adaptors", it is strongly recommended that the shared DIS be configured to send/receive messages to/from partners in standard GovTalk format (ie "http posts" on port 80). Individual partners will be responsible for any required work on any of their specific business systems that do not readily handle this messaging interface; a number of approaches exist, depending on the specifics of the non-compliance involved. Evidence from other Local Government Partnerships and two of the three major suppliers of DIS would indicate that in the majority of situations, such additional work is either not required or minimal.

It is also strongly recommended that a separate "Test" DIS be purchased and installed, so that the live system is not compromised by tests taking place.

In order to minimise business risks, it is also recommended that someone be given the responsibility on behalf of the Partnership to manage the use of the Test and Live environments, and also authorise the transfer of services under test to the live system once agreed conditions are met.

Major investigations were made into the three accredited suppliers (Etude/IBM, SoftwareAG/Sun, and Microsoft/ATOS-Origin/SolidSoft) and issues also raised with Peter Middleton (eGU, Government Gateway). From these investigations it is recommended that the Microsoft solution be purchased (subject to usual procurement processes) as being sufficient for the requirements (including experience in supplying such capabilities to Local Government) and the least cost to the partnership. If there are reasons not to go the Microsoft route, then the SoftwareAG solution is offered as the preferred alternative, although it is currently more expensive. Systems from any of the three suppliers can be purchased as a one-line item from GCAT, which includes installation, commissioning and the first year's support.

The location of the shared DIS is not critical, but in order to reduce risks, it is recommended that the shared live and test DIS systems be locate at County Hall with an agreed SLA for Syntegra to support the installation and ongoing first-line support.

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It is understood from suppliers that a system can be installed and available within 3 months of firm order. This may not include the timescales required to perform any integration/customisation on partners' specific business systems.

It is recommended that the first service to use the DIS capability be e-payments, and that Braintree DC be supported as the first live partner with this service, in order to meet their required service timescales. Further phases of roll-out are recommended within this document.

Capital budgetary estimates are as follows. For the provision, installation, commissioning and setting up of one test and one live DIS system - £75K (Microsoft solution, includes one year of estimated hosting costs from Syntegra). For the integration of the first Cash Reconciliation system: ~£30K. Subsequent integrations (per partner) will probably be in the range £15K-£30K. The integration of additional services will probably be in the range £15K-£30K depending on complexity. **These costs exclude partner's costs for local training of staff (Customer Service and Help Desk) and modifying web pages etc to provide access to the new capabilities.**

Budgetary revenue costs for partners will include a Government Gateway standing fee per partner (currently £5K pa), the costs of each individual Government Gateway service used (per item), the shared costs of hosting and supporting the shared DIS (and also system support costs after year 1), plus local support costs.

The major business risks include building up a sufficient level of experience with actually getting an end-to-end live service up and running, and the actual resource required to complete the integration with individual business systems in each partner requiring it.

If, for some reason, a partner subsequently wishes to remove themselves from this shared DIS arrangement, the impact on the partner will not be very large – they will need to purchase their own DIS capability (and presumably also a test environment) and then re-direct their traffic to their local DIS, alongside re-registering their business credentials with Government Gateway.

The underlying investigation and this report follow on directly from the Authentication report[1] (Martin Jimmick and John Mercer, June 2004) which recommended to the Essex Online Partnership that some form of shared approach be taken with regard to connectivity to the Government Gateway, both for e-payments, and for citizen authentication for partners' online services which handle more confidential information. This recommendation aligns closely with the steer being given by the ODPM in their recent *Priority Outcomes* document. Once partners can connect to the Government Gateway for these services, they will be much better positioned to meet a number of Priority Outcomes such as R4, R8, R9, G8, R11, G11, G12, R18, R19, G16, G17, R27, G25.

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[1] Available online in the Essex Shared Filing System. Click here to go directly to it.

essexonline

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Recommendations on Government Gateway

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Recommendations on Government Gateway

History

Document Location

This document is only valid on the day it was printed.

The source of the document will be found in EOLP SFS (first drafts at Piptel Ltd)

Revision History

Date of this revision: 23.8.2004

Date of Next revision: [Click Here To Insert Date]

Revision date	Previous revision date	Summary of Changes	Changes marked
17.8.2004		First draft for comment/discussion with original stakeholders	No
23.8.2004		Major update, following review with Martin Jimmick (Uttlesford) and Gill Furlough (Braintree), plus additional info received	No

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Recommendations/Conclusions on Government Gateway for EOLP

A single live minimum-scale shared DIS will be more than adequate for providing accredited connectivity for partners to the Government Gateway, opening up the opportunity to provide e-payment services to customers (using the Government Gateway facilities) and also robust authentication of online users for services to customers that involve sensitive information.

Based on information gained from the three accredited suppliers and also other Local Government bodies (both individual councils and partnerships), it is recommended that the lowest-cost option is to purchase a minimum-sized production DIS from the Microsoft/ATOS-Origin/SolidSoft partnership, alongside a Test DIS from the same supplier. A complete DIS, including commissioning, installation and support for a year, can be purchased through GCAT as a single-line item.

Phase 1: Startup

Purchase two systems (one for test, one small one for live). Share across all the partnership, using the Essextranet as the communications route to partners' back-end business systems. Focus on e-payments including back-end reconciliation to most-used Cash Reconciliation systems across EOLP. Aim to bring early adopters live as soon as feasible; once a live service is operating, use the Test system for later adopters. Aim to include e-payments for: Parking, Special Collections, Council Tax, Sundry debtors, Rents, Planning / Building Control Fees, AV's - owner surrender, Environmental Health i.e. wasp nests etc depending on budget available, and to interface to Cash Receipting systems from at least Spectrum and PARIS.

Messaging interfaces to all partners' business systems to be GovTalk-compliant (http posts on port 80), with file dump/collect if really required as an acceptable early adopter strategy for those willing to accept the small business risks involved. It is recommended that the early system will not support alternative "adapters".

It is recommended that the location/ownership of the systems be County Hall/ECC under an agreed well-defined SLA with Syntegra (presumably). At this point, resilience of the live system is standard for a single location IT business system – if additional resilience is required, one of the test systems might need to be upgraded to production level in order to permit migration to live traffic in the event of a major failure on the production DIS.

Furthermore it is strongly recommended that the EOLP appoint a responsible person to manage the use of the Test and Live DIS systems, and authorise launch of fully-tested services from individual partners onto the live DIS, on behalf of the Partnership. A suitable agreed process will be required, in order to minimise the chances of new services/partners impacting current live services on the live DIS. This will be the first time that the EOLP has launched a truly shared service (as opposed to a facility such as Essextranet), so it is vital there are agreed SLAs and a "responsible people" in place.

Cost Estimates (budgetary)
Capital costs for DIS (live and test): £75K
Additional capital costs to get specific cash receipting systems integrated: £30K per system per partner.

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Modifications to partners' webpages etc, and training and support of Customer Service Reps and Help Desk staff, will be additional.

Revenue costs: £5K pa per partner (current) for being registered on Government Gateway, plus per transaction costs, plus shared costs of support of shared DIS (which includes full support after first year – estimate £15K pa) and shared cost of managing the test/live environment.

Comments: A small live system will probably handle all EOLP e-payments for the foreseeable future, plus simple authentication traffic. If development/integration requirements get too large, then the purchase of an additional test system may be justifiable. This approach minimises the risk to individual partners, allows for shared expense and learning, including the sharing of some of the integration costs for earlier "Priority Outcome" services.

Phase 2: Initial Authentication

Once the e-payments services are going live, use the test system for integrating major Revenues and Benefits systems to DIS, initially for authenticating customers to view accounts and submit changes in circumstances (online). Launch onto live system once proven.

Estimated additional capital costs (integration): £30K per service per partner

Phase 3: Major Deployment

The following approach is recommended:
1. Review and if required revise the technical architecture to meet the now proven and emerging demand based on real business need and experience from Phase 1
2. Partners will now need to be able to manage and develop their own customer services on demand.
3. Higher resilience/availability will be required – potential for a remotely-sited warm-standby DIS?
4. Focus on getting an increased number of services and partners able to exploit the systems
5. Retain a messaging interface of GovTalk-compliant http post (port 80) only.

Comments: Once Government Gateway services are used in earnest, it may be appropriate to review the technical architecture and solution, in the light of experience to date and new offerings from suppliers. An in-depth business analysis becomes possible based on real experience, and this may include either moving to a highly-resilient EOLP-based two-site DIS facility, or moving DIS functionality into partners' networks, with resilient capacity available on a shared basis over the Essextranet.

Document Scope
This document forms the deliverable from a brief but in-depth study into the recommended architecture and approach to exploiting the Government Gateway (GG) services within the Essex Online Partnership (EOLP).

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The study was commissioned by the EOL E-Champions and follows on from the Authentication report[2] delivered by M Jimmick and J Mercer in June 2004.

Study Requirements

The study was commissioned to provide a detailed analysis of options open to the EOLP to progress both citizen e-payment and citizen authentication services available through the Cabinet Office Government Gateway. Partners are requiring such services to progress their e-government objectives, and in particular to meet the recently published ODPM Priority Outcomes.

The previous report had made the case for using the Government Gateway for these services, and shown the outline technical architecture, along with a recommended solution with outline costs. At the time of developing that report, there was very little live experience within Local Government of using such systems, but experience from a number of trials and early live service has now become available.

There are three approved suppliers of the "DIS" (Departmental Interface Server") systems that are required for interfacing to the Local Government business systems. These suppliers are:

- SoftwareAG with Sun
- Microsoft (with SolidSoft and ATOS-Origin)
- Etude Consulting with IBM (Linux or Microsoft server platform)

The study was also required to investigate the offerings from these suppliers.

EOLP – Specific Requirements

The Essex Online e-Champions were requested to provide more detailed requirements for this study, and a summary of responses are given below.

Derived from feedback from Harlow DC:
- reference to redundancy / resiliency requirements
- security
- capacity and scalability of the solution
- amounts and costs of consultancy
- integration / interface requirements between the solution and the legacy systems within the authorities (technical, commercial and operational implications)

Derived from feedback from Braintree DC:

- Track record of implementation in local government, both in terms of GG applications and the enabling h/w and s/w
- Good references from local authority customers
- A resilient hardware solution

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[2] Available online in the Essex Shared Filing System, click here to go directly to it.

- A management console as standard that enables you to manage the DIS Device, eg, Audit, statistics, control functionality etc
- Ability to get us up and running quickly (as I said we want to use it for e-payments before November ideally)
- Added value options, eg, what investment/thought have they put into what we could need on top of the basic system?
- Support model - who do we deal with, who can provide support, etc
- Willingness to negotiate group discounts, and how much
- 'On the road' cost, obviously
- No hidden costs, not sure how we get at that one though....?

In terms of partners' current strategies towards prioritisation of services which might use Government Gateway, please see the table in Appendix 6.

Approach

Detailed investigations have been made with all three suppliers, including face-to-face meetings as well as extensive email/information exchange. Suggestions from one supplier about capabilities not available from other suppliers have been tested out with the competitors (leading to some interesting debates).

A face-to-face meeting was set up with Peter Middleton, the Manager of the Government Gateway in the Cabinet Office e-Government Unit (ex Office of the e-Envoy), where numerous issues were raised and investigated, in order to clarify capabilities and limitations.

Direct contact was also established with Mark Brett, London Connects (the London equivalent of Essex Online Partnership) who are also considering options for Government Gateway; with Eamonn McCusker, West Norfolk, currently trialling Government Gateway for authentication for viewing Council Tax and Housing Benefits; and with Ian Cooper, Hampshire Partnership, who have purchased a central DIS capability and are currently configuring for e-payments (payments for scaffolding et al on Highways).

In addition, the plentiful material from Shepway (e-payments) has been studied and discussed with their supplier, and also information from other LG players' use of Government Gateway (including partnerships based in Hampshire, Welland, Northern Ireland, Oxfordshire, and Dorset).

Accredited Suppliers and Their Offerings

A detailed summary of the offerings from suppliers is given in Appendix 2, based on information either provided by the supplier directly, or gained through documents from, or discussions with, the e-Government Unit, or from Local Government organisations currently engaged with the supplier. This summary is inevitable a snap-shot, as the whole area is moving at a rapid rate.

Some specific issues were raised by suppliers as important Unique Selling Points (USPs) of their offerings, and these are addressed in Appendix 4. The conclusion of the author on all of these is that, for Local Government at least in the short/medium-term, these USPs are relatively unimportant, and in the longer-term will inevitably be addressed if subsequent applications demand it.

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Choosing Between Suppliers

It is becoming fairly clear that a DIS box from any of the three suppliers is essentially the same device in terms of functionality, especially if only the standard messaging is used to back-end systems. This study, whilst not being scoped to be a formal analysis and comparison of the suppliers' offerings, has inevitably tested the attitude and approach of the three suppliers, and notes on them are offered here based on this experience. **Any formal procurement process will need to build its own case independently of this document.**

In terms of supportiveness during this study, whilst all suppliers were reactive to requests for information from the author, the perception gained by the author was as follows:

SoftwareAG: so keen to get the eventual deal that they actually stated issues regarding competitor systems that on deeper investigations turned out to be incorrect, or at least strongly misleading. The major one surrounded multiple queues. A lot of time was expended on such matters.

Microsoft: focused entirely on what their system offered, and provided good links to current customers. Work with partners – ATOS-Origin for the raw installation/commissioning, and SolidSoft for integration; good communications with SolidSoft but took a while to establish.

Etude/IBM: Much more focused on Central Government installations, and did not seem to have nearly so strong a track record on Local Government, nor the apparent resources to support customers such as EOLP.

All systems are available as a one-line item in GCAT.

Other Local Government Experience to date

A summary of known local government organisations using, or trialling, access to Government Gateway, is given in Appendix 3. This information is inevitably a snapshot, and is based on direct contact with senior representatives of the organisation concerned, or information gleaned from documents/emails provided or downloaded.

The main conclusions from this brief survey are:
1. Using Government Gateway for e-payments and citizen Authentication/Enrolment is viable, and essentially the way forward for Local Government. Working in partnerships with some form of shared DIS is also viable, although it does introduce some additional complexities as well as savings.
2. The most basic production DIS system from any of the three approved suppliers will be more than adequate for the Essex Online Partnership
3. The actual cost of the DIS box or boxes is not the major issue compared with overall costs. It is probably best to consider the DIS as a "black box" and not add customisations directly to it.
4. Working with the suppliers of both the DIS system (integrators) and existing back-end business systems in order to implement strong integration is the major cost and risk. Some business system suppliers have apparently not been very responsive, leading to major issues outstanding and therefore slipped timescales

5. It is vital to have a separate DIS box for testing, once at least one service has gone live; taking down the "live" DIS box for service upgrades/additions is unacceptable

6. Providing customers with e-payments (automated telephone, Internet/DTV, assisted-telephone) requires significant development work independent of the e-payment system (for example the website needs to be re-designed to point customers to the e-payments options and actually handle the interaction). A similar statement applies to services that require Authentication (Council Tax accounts, Benefit accounts and similar).

7. Vital to test systems early on with real customers, so design, process and technical issues are ironed out before formal launch.

8. The ongoing effort required to support changes/fixes to the Government Gateway service are not insignificant.

Some Specific Issues Addressed as Part of the Study

The author was requested to investigate some specific issues, and also identified other specific issues which relate closely to the situation for EOLP. These are covered below.

Physical Environmental Requirements for DIS

The DIS is designed and accredited by the eGU to function in a normal IT server environment in terms of temperature, humidity etc. There are no additional requirements in terms of physical security above the normal business practice of the host organisation. DIS systems are automatically provided in "lock-down" mode, which is with password requirements set to complex/long and all guest accounts disabled. All of this is a formal part of the accreditation process, and is supplier-independent.

Whichever supplier is used, a DIS will probably consist of a single 2U rack-mount box, with redundant/dual removable discs and dual power supply. All suppliers will provide second-line support for the first year – after that it is up to the owner to contract/supply as required. Some form of first-line support will be required.

Installation/Commissioning: it can be expected that suppliers will install and commission. One man-day of local IT support time will be required to oversee this.

LGOLnet – relevance to EOLP

LGOLnet is a completed partnership project (funded by the ODPM) that aimed to develop a whole set of middleware to enable business systems to be joined up. Full information can be found on www.logolnet.org. The software and schema are all available for download and use within the Local Government sector, and some form of outline support is provided by the technical supplier, CGI.

The middleware that this project produced is inevitably now being duplicated in places by the usual suppliers of business systems to the sector, or their partners. SoftwareAG claim to have over 200 adaptors for their DIS implementation, with Microsoft claiming similar numbers for theirs.

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The main issue for EOLP regarding LGOLnet is going to be support – both at the time of integration, and then a few years' down the line. There are indications that two companies, Lorien and CGI, might provide commercial support of the LGOLnet middleware, but this was not very clear on the LGOLnet website. Whilst there are also rumours that LGOLnet is seeking to develop competitor DIS functionality, this is clearly not within acceptable timescales for EOLP. Partners may well benefit from using the existing LGOLnet middleware within their own local environments for interfacing the GovTalk-compliant messaging to/from the shared DIS, as long as they can be assured that the business risk (for ongoing support) is sufficiently covered. But as the recommendation to EOLP is to keep the shared DIS free from any additional adaptors or middleware, LGOLnet is therefore not being considered further within this report.

Integrating Government Gateway to Business Systems

It is worth pointing out some vital issues which will impact on all partners who wish to use Government Gateway services, these issues being essentially independent of DIS supplier or even the architectural approach taken to provide DIS.

In order for a partner's existing business system to exploit Government Gateway (GG) services such as e-payments or Authentication/Enrolment, that business system will require additional scripts or coding to provide the new interface to the internal information. For example, the Government Gateway Authentication/Enrolment processes will require name/address information to be sent from the specific business system to the Government Gateway in order that a service PIN can be physically posted from the Government Gateway systems to the individual for them to activate use of the online service; the Government Gateway does not store the names/addresses of individuals. A number of standard Local Government business systems presumably already have this additional scripting or code (or at least do have on their latest versions), but each partner will need to find out from the suppliers of their business systems what is involved in providing that interface. If the interface module/software was written primarily for Government Gateway, then there is a high chance it will meet GG/DIS interface requirements and no further adaptor will be required in any DIS.

For business systems that already have their own, but proprietary, external interfaces, then plug-in software adaptors can be purchased for the shared DIS. These adaptors can either be obtained from the supplier of the relevant business system, or from a third-party specialist supplier, or written from a framework by a specialist supplier. For simple adaptors, a number are provided free, for example Microsoft offer adaptors for Web Services, ftp and SQL Server free (source: website). However, using such adaptors on an EOLP shared DIS is not the preferred way forward, as is discussed below.

Interestingly, both SoftwareAG and Microsoft have implied that their belief is that "a high proportion" of existing Local Government Business Systems will handle http posting with little modification; very old versions/systems will not provide this, and are probably too expensive to integrate in (at best, a send/receive of a simple file is apparently being used in one LA with a major legacy mainframe environment)

In addition to integration with back-end systems, partners will also need to modify their customer-facing access systems, be that Internet, DTV, mediated access or automated

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telephone, to include the new services. Aspects of these services will also interface directly to the Government Gateway (eg for e-payments). For example, new webpages, and modifications to existing ones, will be required if a partner wishes to open up e-payment options for a range of payments, or to inspect Council Tax account balances, or report changes in circumstances with respect to Housing Benefits. Whilst this is "business as normal" for most partners in terms of getting new services online, it is a cost that has to be realised and resourced.

Using the Essextranet for Messaging to/from Partners' Business Systems

Security

The Essextranet clearly provides an adequate extranet connectivity between partners, so a DIS facility could readily be shared across the partnership. But some issues arise regarding firewalls within the end-to-end Essextranet, which could impact the overall technical architecture.

If all partners' back-end business systems (that will need to be integrated with DIS functionality) are fully e-GIF/GovTalk compliant, there are essentially no issues here: the DIS system can post/receive via http (port 80) using GovTalk-compliant XML messaging. But the reality is probably different, in that some partners' business systems do not have this functionality without upgrades or additional work. A more detailed analysis is given in Appendix 5.

The recommendation is that the shared DIS only communicates with partners' back-end business systems using GovTalk-compliant http posts (port 80). This will minimise any security risks and also minimise the business risks associated with potentially many software adaptors running on the live shared DIS environment.

Ownership/Responsibility for Handling Back-end Messages

This was raised by the e-Government Unit. A DIS box receives messages from the Government Gateway in a fully-traceable manner. In a more "conventional" setup, where one organisation owns a DIS box, this means that messages can be tracked into that organisation, independently of how that organisation subsequently handles messages. If an organisation chooses to use an adaptor on the DIS box that converts messages (say) into a CSV file, which is then picked up by the back-end business application, then that less-traceable method of message-handling is all within the one organisation's networks/systems. But in the case of the EOLP, if a shared DIS box is used, then messages received at the DIS box may be handed off to partner organisations in a less-traceable manner because of the back-end systems being used; therefore the issue of responsibility for those messages needs to be carefully understood by the partner and the host organisation for the DIS box, and suitable SLAs agreed. Clearly if the recommendation from this report of only supporting GovTalk (http posts on port 80) messaging is adopted for the shared DIS, this issue poses far less business risk, as all such messaging will be traceable into partner's own local systems.

Ongoing (Revenue) Costs to Partners of Using Government Gateway Services

Whatever DIS solution is adopted, partners will have to budget for ongoing costs associated with using the Government Gateway services. These have already been covered in the

preceding document[3]; for cross-reference, an extract from a Hampshire Partnership business document is included as Appendix 8. As well as revenue costs directly associated with using the Government Gateway services, there will also be shared revenue costs for supporting (after year 1) and hosting the shared DIS environments (live and text) and the shared cost of managing the shared DIS environments.

Disaster Recovery

Whilst a high-availability DIS service can readily be provided through the usual multi-disk/processor/power supply etc architectures used for the production DIS hardware server, this does not cover the situation where fire or a similar incident damages a building or network connection. In this situation, a remotely-located server is required.

Various options exist, depending on cost/business requirement. It is recommended that, initially, for phases 1 and 2, no additional hardware/software is purchased to cover Disaster Recovery, but that this issue is addressed for Phase 3 deployment (see below).

Discussion of Options and Issues for the Essex Online Partnership

A number of options therefore exist for the Essex Online Partnership. These options are discussed below.

High-Level Architecture

At this early stage of using the Government Gateway, it would seem best, if at all possible, to share learning of all sorts across the Partnership, and so heavily reduce learning-curve costs. These costs not only include the high-level learning, but also final technical commissioning and support issues.

It would seem clear that a single entry-level production DIS from any of the suppliers will be more than adequate for the EOLP for a number of years, as the transactions involved are relatively small-scale (in terms of load on the DIS) even though volumes might be reasonable. Therefore there seems to be no need in early stages for "clustering" of partners to share DIS – one system will be satisfactory.

All suppliers, and the eGU, strongly recommend the purchase of a completely separate test environment; one supplier (Microsoft) offers a test-only system for ~£6K. The eGU offer test "DIS" and test "Government Gateway" software on CDs for early tests.

A number of potential security issues arise from having any shared DIS functionality, and these are addressed separately.

Management of Shared DIS Facilities

This sub-section briefly looks at both the high-level business use of the shared DIS, and also the lower-level day-to-day technical support of the facility.

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[3] EOLP Registration and Authentication Project Report, M Jimmick and J Mercer (Uttlesford DC), June 2004

Management of Test Environment and Releasing Services to Live Environment

The eGU strongly recommends having a fully-separate test DIS environment, and this is supported by the suppliers. If a centralised shared DIS environment is used, there will need to be an agreed process for each partner for each service of using the Test DIS and then moving the service to the live (production) DIS environment, this process not only being aligned with Government Gateway/eGU requirements, but also implemented to ensure that newly-enabled services are highly unlikely to impact the production/live environment. In order to achieve this in an open and efficient manner, it is suggested that a single person be responsible to the EOLP for the management and use of the test and live DIS environments, including signing-off release of new services onto the live DIS. The main objectives of this manager will include: maximising the efficient use of the shared DIS environments, minimising any business impact from one partner's service on another partner's live service on the live DIS, ensuring equal access to test environment for all interested partners, and minimising any necessary bureaucratic processes or barriers to partners exploiting the shared DIS environment.

Day-to-Day Management of Live DIS Platform

The eGU specification for DIS requires that there is a management interface which permits high-level monitoring of messages going through the DIS, sorting out any messages with errors or in a "suspended" queue, and full audit/tracing of messages. Therefore all three suppliers' accredited systems will provide this.

SoftwareAG claim to have a "fully integrated console management" system with their offering.

Microsoft/SolidSoft claim to have a live "Health Check" console for documents currently going through the system, alongside full audit capability. The "Health Check" is essentially a webpage which provides a current view on activity in the DIS, along with the ability to perform some basic actions. For more detailed reporting, they recommend using either some form of SQL Reporting tool to display audit results (based on business need), or use the in-built (supplied) Business Activity Management (BAM) toolset which is part of BizTalk2004. The BAM can analyse traffic throughput by many parameters, and is designed to be customised by local Business Analysts, not IT Consultants. The output from BAM can be in Excel spreadsheets/charts. More details from SolidSoft in Appendix 9.

No definitive information on live system management was obtained from Etude/IBM.

Timescales and Costs

Suppliers are stating they can install a basic DIS within 3 months from order, including commissioning and final test. This seems to tie up with the experience from other partnerships.

Hampshire partnership suggested a budget of £55K would see their initial DIS system up and running. That included expected hosting costs for the hardware and external integration costs (£1K) to one service. It appears to exclude internal resource costs. Their business case bid included the extract in Appendix 7. In addition, the actual e-payments environment/service would require investment of perhaps £8K, plus training costs for Help

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Desk and Frontline staff. Readers who are interested in seeing more of the documentation of the Hampshire partnership are welcome to contact this author.

SolidSoft have subsequently suggested the following budgetary figures (for a Microsoft implementation):
1. Initial supply of one DIS (production) plus one Test DIS, including commissioning and getting one simple e-payments service working to one partner: ~£75K
2. Additionally to add one service to one partner that requires Registration/Authentication/Enrolment: ~£30K
3. Additional services or partners to existing service: £30K down to ~£15K depending on ability to re-use experience.

These costs assume that the integration with back-end business systems is viable (both technically and in terms of support from the supplier). The costs also <u>exclude</u> the necessary internal resource required in the partner to support the integration and testing, and exclude any webpages (etc) re-designs and local training requirements (Help Desk, CSRs). For partners that use out-sourced IT support, some of these exclusions will probably equate to real cash (not just available effort). The costs probably <u>include</u> raw hosting costs for the shared DIS system (to be confirmed) for the first year.

Wherever the DIS is sited, it needs to be properly installed and supported, under some form of agreed SLA. One option is clearly to host it at ECC (County Hall), and to that end a formal request has been made to Syntegra to ascertain their hosting costs for the DIS box.

Hampshire CC have implied that typical hosting costs for DIS are £2000 (total) for installing a production and test environment in one drop, plus £5000 per annum per server for first-line support. After the first year, additional costs will be incurred to obtain full support for the systems once the one-year supplier support has expired (part of the initial cost).

Based on this experience, it is suggested that a shared DIS (one production, one test) could be installed for £75K (including one year's support), and that an early trial for e-payments for one straightforward service might be included for an additional £30K (one partner), depending on the complexity of the service; as stated above, local resource would be additional, so also the costs of re-authoring access webpages etc.

Given that those EOL partners who have responded to a request for prioritisation of services have requested e-payments across a number of services within short timescales, it is suggested that Phase 1 of any deployment include most of these to at least one, or perhaps two, Cash Receipting systems. This would inevitably increase budgetary requirements, and an estimate at this stage would be £60K for the specific local integrations required for perhaps 2-3 partners. These figures are inevitably highly draft until full requirements have been defined, the current environments stated, and relevant suppliers able to give firm estimates.

In terms of initiating and eventually launching Authentication for viewing Council Tax Accounts and Council Tax//Housing Benefits, costs here are much more speculative, but perhaps two partners might be able to launch a single service for an additional £60K (plus local resource etc). With the shared DIS working through the e-payments above, then the

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resources required focus on the integration aspects of back-end systems (and potentially any CRM), the changes/additions to customers' automated access systems and training for the front-line and Help Desk staff.

Brief Conclusions

1. A shared DIS environment is viable for the Essex Online Partnership, and this report states a number of detailed recommendations.
2. Outline Budgetary costs, both capital and revenue (ongoing), have been stated.
3. The management of the shared DIS environments also needs to be defined, and recommendations on this are stated
4. Sufficient information is now available to propose agreeing a firm budget and initial scope for a deployment of a shared DIS for the Essex Online Partnership.
5. The associated medium-term business risks for such a deployment can be kept low and are considered at least as low as other potential routes (avoiding the use of Government Gateway) towards the same business objectives.

Appendices

Appendix 1: Overview of Government Gateway (GG)

Appendix 2: Summary of Supplier's Offerings

Appendix 3: Local Government Organisations Using DIS Boxes

Appendix 4: An Overview of USPs raised by Suppliers

Appendix 5: Shared DIS and Essextranet Firewalls

Appendix 6: Snapshot of Service Priorities by Partner

Appendix 7: Hampshire CC Costing for Initial E-Payment Service

Appendix 8: Hampshire Partnership Summary of Government Gateway Transactional Costs

Appendix 9: Management Facilities Provided on Microsoft DIS

Appendix 1: Overview of Government Gateway (GG)

The information within this Appendix is copied directly from the preceding EOLP deliverable[4].

The Government Gateway provides:

- A proven way for departments and local authorities to connect back-office systems to the internet.
  The Gateway provides a cost effective, easier and faster way for connecting back-office systems.
- Re-usable services.
  Using the Gateway reduces implementation costs, reduces risk and decreases project delivery time scales. The Gateway provides a set of reusable components including secure mail, payments and authentication (supporting both user ID and password, and digital certificates).
- Single sign-on and hidden back-office structure.
  The Gateway can deliver joined-up transactions where one customer service can be directed to many parts of government. The complexities of back-office systems are masked from the citizen.
- Interoperability.
  This is achieved through GovTalk, which promotes best practice on the use of XML and schema creation to provide interoperability based on open standards.

Users of the Government Gateway are:
- Citizens – for personal transactions.
- Organisations – commercial or non-commercial.
- Agents – an individual or organisation authorised to act on behalf of another individual or organisation.

The Gateway can assist partners fulfil a number of the priority service outcomes included in the recently published ODPM paper. These may include: R4, R8, R9, G8, R11, G11, G12, R18, R19, G16, G17, R27, G25.

Each department or organisation that is connected to the Government Gateway will require a Departmental Integration Server (DIS) to be installed within its computer centre. This provides full GovTalk XML interoperability with the Gateway.

Users interact with the Gateway, typically through a web browser and portal or through an application, for example an accounting package. Portals permit the completion of electronic forms interactively on the internet, while applications permit the completion of electronic forms locally on a PC. In both cases the internet and the Gateway provide the mechanism for the submission of completed forms to the appropriate department and the return of a corresponding receipt acknowledgement.

Current Government Gateway Services:

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[4] Appendix 1 of the EOLP Registration and Authentication Project Report, M Jimmick and J Mercer (Uttlesford DC), June 2004. Page 25

e-Authentication

Recommendations on Government Gateway

- **Registration and Enrolment** engine for authentication
- **Transaction engine** for routing
- **Payment Engine** for payment of government related bills by credit, debit card or for setting up direct debits
- **Secure Mail** system for secure communications between user and Government

Below shows the architecture of the Gateway:

(end of extract)

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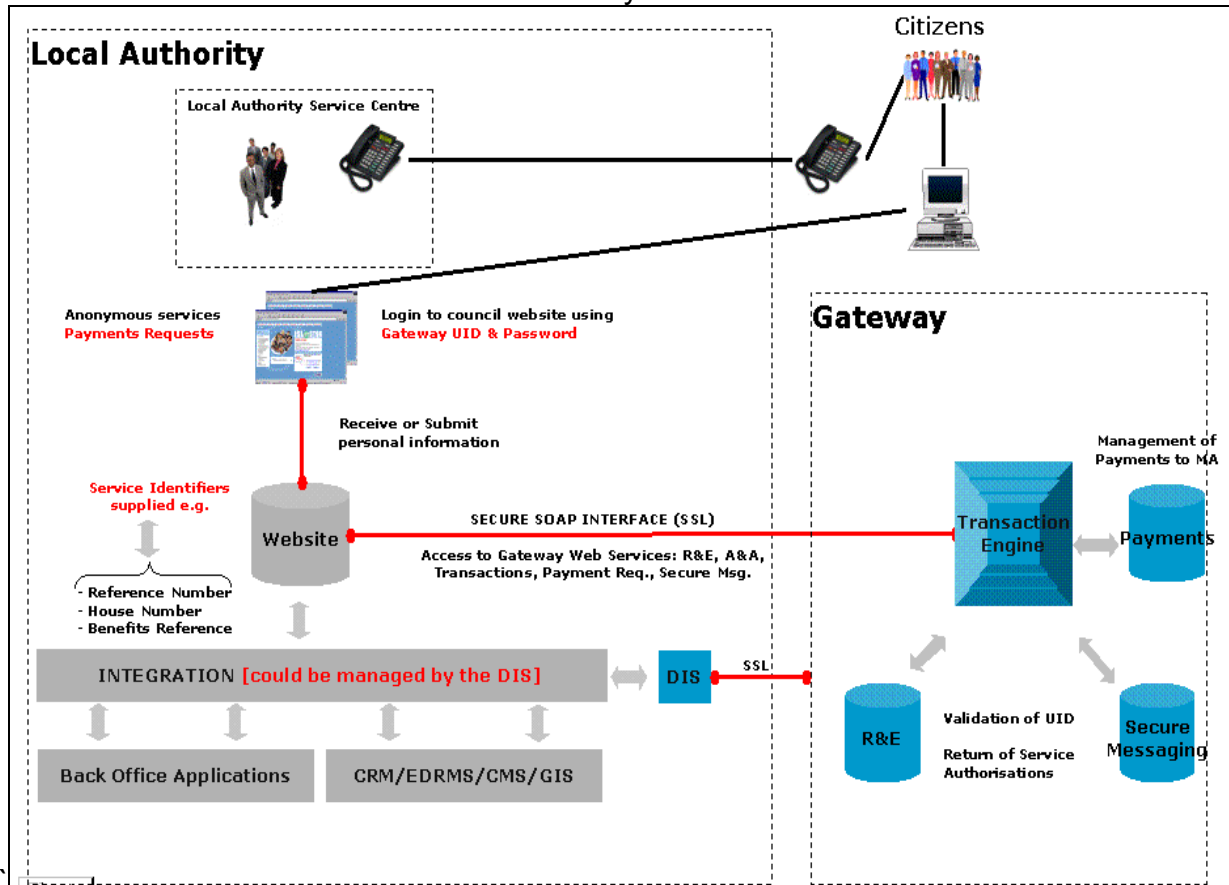
Appendix 2: Summary of Supplier's Offerings

Supplier	Technology Basis	Accreditation	Sample LG Customers	Traffic Handling	Stated Integration plug-ins	Raw Costs	Included Items	Notes
Etude Consulting / IBM	Win2K server – J2EE software – platform independent, emulates BizTalk protocols.	Yes (full in 4/2004) – awaits live customer service	e-payments only at: Wolverhampton (pilot); Oxfordshire CC, due live ~10/2004; Havering, Isle of Wight (pipeline); London Connects (interest)	10-20 messages/sec (standard PC @ 1GHz)	"Gateway Connects" – connect in smaller parties to central hub – adapter in back of DIS. Not yet engaged with Business Partners; use JMS or J2EE.	Entry level: £9.75K (test) Advanced: £26K (incl hardware) **Gateway Connect** £15K/processor, plus £5K/additional connecting agent (hardware extra)		DIS software runs on either Win2K or Linux. Etude has marketing agreement with IBM. Etude consulting £1500/day less bulk discounts. Provided feedback on some issues raised, but appeared to be under-resourced to engage deeply at this stage.
	SUSE Linux 8.2 –software as above, on IBM Websphere as well.	Pending		Hardware dependent	As above	As above		As above.
Microsoft / Solidsoft / ATOS-Origin (was Sema) – early offering	BizTalk2002 plus custom code (owned by eGU)	Yes – used extensively in central government, plus some LAs		n/a	n/a	n/a	n/a	Now replaced by BizTalk2004 version

Supplier	Technology Basis	Accreditation	Sample LG Customers	Traffic Handling	Stated Integration plug-ins	Raw Costs	Included Items	Notes
Microsoft / Solidsoft / ATOS-Origin (was Sema) (current offering)	BizTalk2004 and integrated off-the-shelf code. Able to extend to Web Services using OASIS standards.	Yes – for Internet access (Local Government), awaits final test for one variant of GSi-based version (Central Government)	W Norfolk (part of Norfolk Connects partnership), Rotherham (National Benefits Project). Northern Ireland (13 central, 23 Local Government organisations on one large shared system), Hampshire partnership (similar – hosted by Southampton), Portsmouth (own DIS).	6 messages/s at 16KB /message	Via Web Services (OASIS) or standard GovTalk-XML. "over 300 off-the-shelf integration adapters provide seamless integration with your back-office systems". "Visionware" – to handle multiple identity management (from National Benefits project).	£6K (test only) £12K (small), both include installation, commissioning, final test and 1-year support. £100K max for largest system (inclusive) – 6-box resilient system for Northern Ireland.	ISA2004 (ISA2000 is EAL2 accredited), BizTalk2004, SQL Server 2000, Server2003 (Win2K is EAL4 accredited); Microsoft Operations Manager – Manageability (Optional)	Current version. Purchase through GCAT (single-line item) – Dell or HP/Computacenter. Installation probably needs 1-day of local effort. SolidSoft provide integration capacity. ATOS-Origin actually install/commission. Addressed many very detailed issues head-on, with good feedback, but were careful not to comment on other suppliers' capabilities.

Supplier	Technology Basis	Accreditation	Sample LG Customers	Traffic Handling	Stated Integration plug-ins	Raw Costs	Included Items	Notes
Software-AG / Sun	Sun V240, V280, clustered V280; Solaris, Sun Screen, SUN ONE (Web and Applications) Servers, Tamino, EntireX.	Yes	Sunderland, Sedgemoor – early pilots (did not go live); Shepway (e-payments, CSV file only), Dorset partnership (shared box), Northumbria (CTax, with Identity Management), Welland partnership (one DIS/District), Tewkesbury, Dorset, Devon (possible): "21 boxes in Local Authorities".	5 messages /sec at 2K /message (draft eGU doc), 18K (e-pay) transactions /hour (Supplier)	Any native JMS. Identity Manager –to solve multi property and/or multi-responsibility problems with Council Tax. Many business applications, including SX3, Spectrum, Capita, Academy, Radius, SAP, PeopleSoft, JD Edwards, Valid R/KYV "-Over 200 back office system, database & CRM adapters: Oracle, DB2, SQL Server, Adabas … -Links the DIS to commercially available middleware solutions including EntireX and Tamino, MQ Series & MSMQ - LGOL-net connectivity"	£22K (small) £70K (medium) Supplier recommended single £70K sys for EOLP (any test environment(s) extra).	Hardware SSL accelerator, internal firewall (SunScreen), integrated single-console management	Various USPs claimed – see Appendix 4 for more information. A lot of time wasted by their claimed technical superiority over the other two suppliers – mostly out of date info or clearly wrong (checked with eGU, for example, as well as other suppliers). This over-keenness to make the sale, along with higher initial costs, makes it hard to recommend them as first choice.

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Appendix 3: Local Government Organisations Using DIS Boxes

LGO	Partnership	Supplier	No of DIS boxes	Tech Architecture	Services – current	Services – planned	Info Source	Notes
Shepway DC	None	SoftwareAG	1	Single box at LG.	e-payments – via CSV file collected by Academy cash reconciliation system	Wider e-payments; Authorisation for other services, "Integrated hub"	Shepway website; SoftwareAG	Flagship customer for SoftwareAG and GG. 3.5K payments processed in 6 months.
S Kesteven	Welland	SoftwareAG	1	Single box per authority	Authorisation (Housing/Council Tax benefits on SX3)		SoftwareAG - mostly meetings and emails.	Welland partnership implementation delayed by firebomb at S Kesteven offices. One DIS/LA described as "not necessarily ideal" by SoftwareAG
Dorset CC	Dorset	SoftwareAG	Not known	1 shared production DIS for whole partnership	e-payments		SoftwareAG (some eGU)	No test DIS box – a major vulnerability (eGU)
Northumbria CC	Northumbria	SoftwareAG	Not known	1 shared production DIS for whole partnership	e-payments		SoftwareAG	
Tewkesbury DC	None	SoftwareAG	1	Single box at LG	e-payments		SoftwareAG	
Northamptonshire CC	None known	SoftwareAG	1	Single box	e-payments		SoftwareAG	
Wolverhampton	None	Etude	1	Single box	e-payments of Council Tax		Etude	Apparently still in pilot – some delays have occurred

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LGO	Partnership	Supplier	No of DIS boxes	Tech Architecture	Services – current	Services – planned	Info Source	Notes
Oxfordshire CC	Oxfordshire	Etude	1	Single box	e-payments (1 service now – payment of fees for Registration of Deaths/Births)	8 more e-payment services.	Etude	
LB Havering		Etude					Etude	In discussion
Isle of Wight		Etude					Etude	In discussion
West Norfolk	Norfolk Connects	Microsoft / SolidSoft	1 test (warm standby) + 1 production	Single box with warm standby. Partnership will use 1+1 DIS box/LA.	Authentication for Council Tax and Housing Benefits – enquiries/balances and changes in circumstances (not first claim)	e-payments; extension to benefits within National Benefits project	Microsoft, W Norfolk DC ICT Manager	Started with SoftwareAG, moved to Microsoft ("very impressed"). Second LA (Shepway first) to install a DIS. Uses old BizTalk2002-based version – MS have stated they will be upgraded f.o.c. Problems with SX3 (Revs/Bens supplier); problems with GG technical issues. Can't yet handle two people responsible for one property (C Tax). Service currently stealth live.

LGO	Partnership	Supplier	No of DIS boxes	Tech Architecture	Services – current	Services – planned	Info Source	Notes
Hampshire CC	Hampshire partnership (except Portsmouth – use own DIS)	Microsoft	1 test 1 production	1 shared box at Southampton, with fail-over to warm standby	e-payments (Licence costs for scaffolding/building materials on the Highway - in trial)	Further e-payments; others tba	Microsoft, SolidSoft, ICT Principal Consultant (Hants CC)	BizTalk2004 version. Hardware installed, first service being integrated. Went through thorough evaluation process between all 3 suppliers before Microsoft were clear about DIS2004 capabilities – author has copies of resultant documents.
Northern Ireland	Northern Ireland LG and CG	Microsoft	1 resilient production (6 boxes), plus 1 test	1 max configuration system for all 13 central and 23 local government NI organisations	Land Registry licensing, plus many others migrated from old BizTalk2002 DIS systems		Microsoft	Major aggregation. System delivered – now in test.
Rotherham MBC	Single authority	Microsoft	1 production 1 test	1 production box for MBC. National benefits project.	License applications (including permissions and payments) National benefits project – Advisor authentication (using SX3/Comino).	Trusted 3rd Parties (CAB, RSLs), Gov 2 Gov (Police)	Microsoft Rotherham publicity information	

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LGO	Partnership	Supplier	No of DIS boxes	Tech Architecture	Services – current	Services – planned	Info Source	Notes
N Somerset	Single authority	Microsoft	1 production 1 test	1 production box	Will clone W Norfolk (see above) – use SX3.	Will clone W Norfolk	Microsoft	Wanting to gain learning (and avoid pain) from W Norfolk experience
Luton and Beds	Beds	Microsoft	n/a	n/a			Microsoft	
Bury (Lancs)		Microsoft	1 production 1 test				Microsoft	
National Benefits Project		Microsoft			As defined in National Benefits project		Microsoft	4 authorities going into advanced pilot, up to 12 to follow.

Appendix 4: An Overview of USPs raised by Suppliers

SoftwareAG:

1. *SSL Accelerator included, others supply it extra*: SoftwareAG include a hardware SSL accelerator in their offering, but the other suppliers use a software implementation. Although SSL does take some computational power, throughput of the other suppliers' systems does not seem to be markedly different to that from SoftwareAG/Sun. In particular, data messages to/from Local Government, at least in the short and medium-term, are liable to short, so the impact of such accelerators will probably be minimal in reality.

2. *One box solution*: SoftwareAG claim their solution is "complete", including the SSL accelerator (above), two processors and the optional internal firewall. The alternative suppliers use a software SSL solution. The Microsoft solution can share out some functionality with existing servers in a real implementation. The advantage simply depends on the requirements and the existing technology. The "16-box" solution for DWP, which used Microsoft, could have been done with one Sun box: eGU and Microsoft confirm that a solution was installed over 2 years' ago, but was part of a much larger overhaul. eGU implied that "16 boxes" was highly inaccurate. Microsoft states that their largest system requires 6 boxes (resilient, as for N Ireland). Formal feedback from Microsoft on the DWP is: "*Checked and the DWP production DIS consists of 8 servers. This was the original OeE DIS (ie not MS DIS2004) so the architecture has changed. Our largest DIS is 6 boxes (2xISA, 2xBiztalk, 2xSQL for resilience). You can scale the BizTalk tier for performance by adding more processors or servers but I can't imagine even IR or DWP getting much above 4 BizTalk servers*".

3. *True Multi-threaded/Multi-services operation means better message handling and resilience:* SoftwareAG believe their multi-threaded implementation (unlike anything based on BizTalk) inherently permits large messages to processed in parallel with smaller ones, and any mal-formed messages that cause a queue to become paralysed do not impact any other queue. The eGU, whilst accepting that the older BizTalk2002 server used a single transactional queue, are unable to support this claim. Formal feedback from Microsoft is that this is definitely not the case for BizTalk2004 implementations, and in fact their approach of one queue being processed in parallel may actually have a small advantage over the multi-queue approach from SoftwareAG (but weren't prepared to prove this). The DIS spec requires that any mal-formed messages are moved to a "Suspended" queue for operator handling, so these will not block the system. Microsoft has tested their DIS box with multiple messages in one queue, some large (25MB), many smaller, and many of the smaller messages have been shown to be completed whilst the larger one is being processed. Formal feedback is awaited from Etude. Also, messages from Local Government will all be short (authentication being the only time-critical one using the DIS box); the DIS box is mostly used store/forward for non-critical messages, such as e-payment reconciliation.

4. *Microsoft has not got their latest (BizTalk2004-based) implementation fully accredited.* The latest implementation is fully accredited for messaging to the Government Gateway over the Internet; one specific variant of the version with messaging to Government Gateway over GSi is still awaiting final accreditation. This has no impact on EOLP as we have no direct link with GSi.

5. *Neither Microsoft nor Etude/IBM offerings are fully accredited*: All offerings have to undergo rigorous testing by eGU before test access is permitted. Final "accreditation"

might be considered by some to be complete once live customer traffic is passing to the live Government Gateway, but that does not seem to be eGU's interpretation of the rules.

6. *Only SoftwareAG offer a single coherent Management Console:* The EGU specification requires that an accredited DIS has an integrated Management Interface provided as standard, with full message traceability and audit. Therefore it is safe to assume all three suppliers' accredited systems meet this requirement. Microsoft state they offer a "Health Check" Console (a webpage, which shows current activity and permits basic actions), along with a whole set of business reporting tools, which are aimed at being configured by Business Analysts (not IT Consultants) and provided as part of any standard BizTalk204 installation.

Microsoft:

1. *Test DIS box for £6K:* Microsoft is offering, under its MSDN programme, a test DIS box for £6K (includes all software). Currently this cannot be used for live service (£12K software on smaller production systems).

2. *Test DIS can handle multiple virtual servers:* Microsoft can also offer virtualisation of servers on one hardware box, so developers/integrators can work independently. eGU offer "DIS in a box" (DIAB) and "Gateway in a Box" (GIAB) software for such servers. Microsoft claim that one physical box could handle multiple test DIS environments (DIABs) and a GIAB with each virtual server independently re-bootable. It would be surprising if Sun/SoftwareAG were not able to offer something similar, if implemented slightly differently. The IBM/Etude offering, where run on a Microsoft Windows Server, will clearly be able to include the same virtualisation.

3. *All adaptors developed for interfacing to typical Local Government business systems are being offered to the "Open Application Service Library" (OASL), run by LB Newham.* Apparently adaptors for SX3 (as used by Rotherham and W Norfolk) are typical examples – LB Newham state this will only become active/available in a month or so, and will not start with DIS adaptors.

IBM/Etude: (none)

Appendix 5: Shared DIS and Essextranet Firewalls

The conventional structure for a DIS box (for one organisation) is:
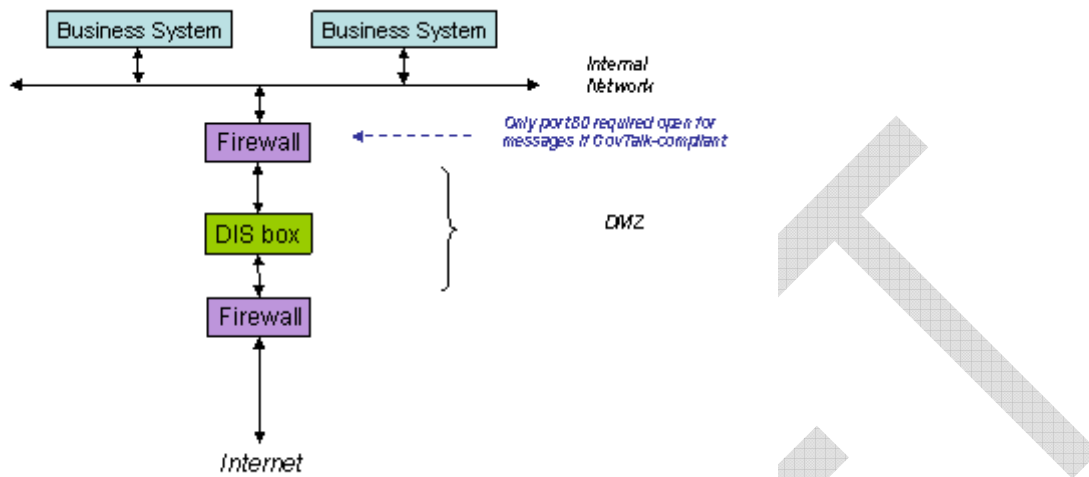
Figure 1: Conventional Architecture for DIS in a Single-Organisation

In Figure 1 the DIS is installed in the organisation's DMZ (part of the Firewall structure). It receives messages from the Government Gateway over the public Internet through the outer firewall, and communicates with the organisation's business systems through port 80 (http) through the internal firewall of the DMZ. There is little likelihood of any new security risk as port 80 will already be open for the organisation's everyday Internet surfing. This does assume that all the organisation's Business systems are GovTalk-compliant.

Where an organisation has older business systems that are not GovTalk compliant, those systems may well communicate over other ports/protocols. Opening these ports on the inner firewall may increase the risk of security breaches through the whole firewall system, so instead an additional server can be introduced that interfaces the legacy systems to the GovTalk-compliant DIS box.

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essexonline

e-Authentication
Recommendations on Government Gateway
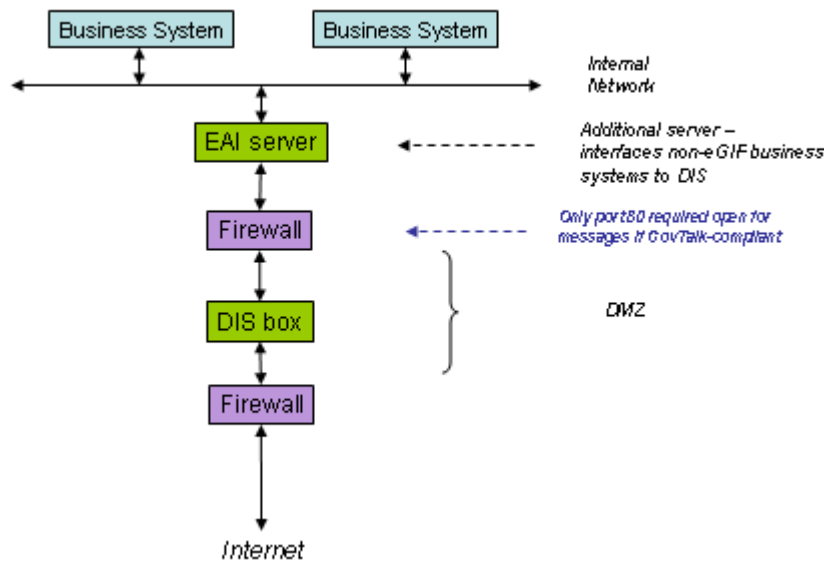
Figure 2: Addition of EAI server to handle Legacy Business Systems

In Figure 2, the additional server has been labelled "EAI" or Enterprise Application Integration/Interface device. It handles all the "non-standard" messaging and port numbers safely within the organisation's private network and then interfaces to the DIS box through the inner firewall using GovTalk-compliant http (port 80).

For the EOLP, it is clearly advantageous not to require each partner to introduce EAI servers into their networks. Therefore, in order to use a shared DIS, one way forward might be to exploit the inherent security of the Essextranet (cleared to eGU level 1). For this to happen, the firewalls of each partner which face the Essextranet need to be open to handle the messages **that only their own specific business systems need** to communicate with the shared DIS. These specially-opened ports within the firewall would also be limited to sending/receiving messages from the specific IP address of the DIS.
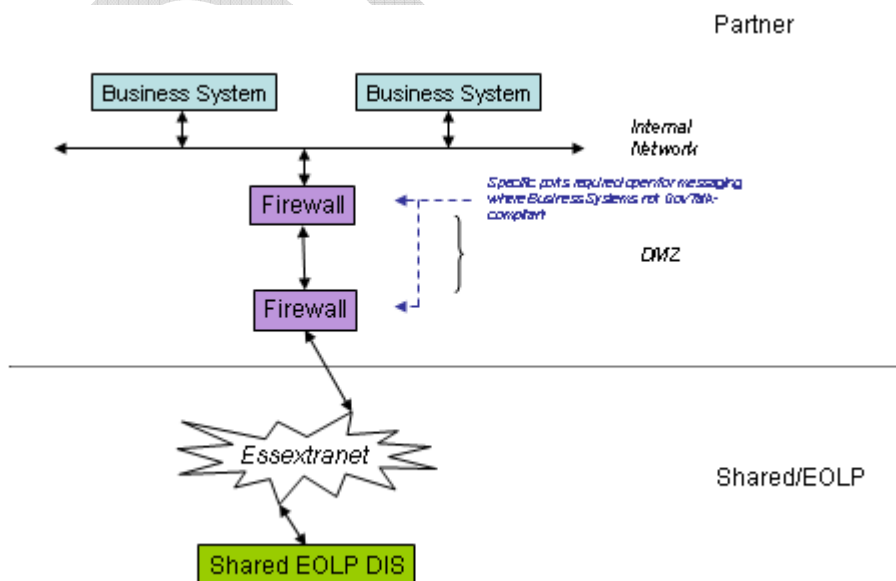
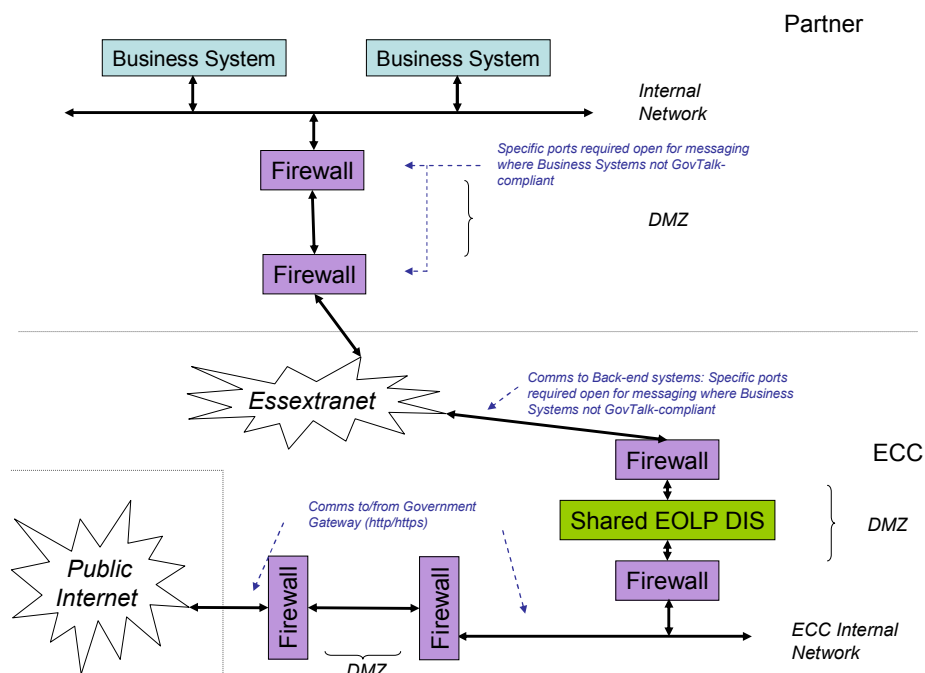**Figure 3: Shared DIS over Essextranet**

In Figure 3, the specific partner has to configure his Essextranet-facing firewall only (not that facing the Internet) to pass the messages on the port numbers used by their specific business systems to the shared DIS. More recent business systems will use http/https on standard ports already open. For their other Business Systems, it will clearly be up to each partner to decide whether to make an additional investment to bring their back-end business systems up to GovTalk compliance or introduce some form of thin (or comprehensive) EAI layer, or accept the small business risk from having additional ports open to the Essextranet (from a specific defined IP address). On current information, it is suggested that this risk, in most cases, is small.

Intense debate has taken place over this whole area with both Microsoft and SoftwareAG/Sun, and the independent recommendation from them both is that the DIS should be treated simply as a black-box functional entity, and therefore only handle port 80 http posts (GovTalk compliant). Any "adaptors" required for interfacing to specific business systems should be installed on the partner's specific systems/network. Some early adopters are using simple file collect/dump interfaces to the DIS (eg a CSV file for e-payments' reconciliation information), although with this approach full transactional capability is not maintained. Others are talking of using JMS interfaces (which instantly interface) or equivalent in due course. It appears that the standardised strategy is being used by the Hampshire partnership and also Northern Ireland. It is also understood that, in Birmingham City Council, the interface to a highly legacy mainframe system is being implemented with file dump/collect to the file format of the mainframe business system; all efforts to develop a more integrated implementation were simply not considered cost-effective.

Generalising this to a shared Essextranet environment and considering in more detail the architecture at the host location, the following architecture is suggested (Figure 4):

Figure 4: Possible Shared DIS Architecture for EOLP
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Note that, yet again, the messages to/from partners' business systems pass through the Essextranet firewalls at both the host environment (assumed here to be ECC) and that of the individual partner. If the messages are simply http/port 80, this is of no consequence security-wise (and similarly if ftp/port 21 is used for file dump/collect), but if more specialised ports and protocols are used, a very small risk is potentially introduced, and some considerable additional complexity on the shared DIS.

A summary and recommendation is therefore as follows:
1. A shared DIS across the EOLP is feasible, but partners need to be aware of the potential implications on their firewalls facing the Essextranet, depending on the strategic approach adopted
2. Partners need to investigate how easily standard http posts can be used for the specific business system being enabled, either via additional layers of software within their own local environments, or perhaps simply through an internal webpage. If full transactional capability is not required, then a simple file drop mechanism might be employed for early releases, although this may or may not use http posts (port 80).
3. Alternatively, if the cost of additional functionality above is unacceptable, the partners' firewalls to the Essextranet may need to have ports opened (across the specific partner's DMZ for Essextranet) that correspond to the specific requirements of their back-end business systems which need to communicate with the shared DIS box; some form of specific business-system adaptor would be used at the central DIS. This is an acceptably small business risk on the Essextranet, but would almost certainly not be acceptable for firewalls facing the Internet.
4. Both SoftwareAG/Sun and Microsoft/SolidSoft, whilst accepting that the above approach might be acceptable, have none the less strongly recommended keeping the shared DIS as a standard device with no business-system specific add-ons, thereby mandating a standard http post (port 80) messaging system through all Essextranet firewalls to partners' local business systems, and requiring any adaptors or additional integration methods to be implemented within individual partners' environments. Whilst this might appear a costly way forward, experience from other Local Government partnerships would indicate this as the optimum way forward, and apparently many standard Local Government business systems are able to handle such messaging with little modification
5. It is therefore recommended that the shared DIS only communicate with partners' back-end business systems using GovTalk http posts (port 80), and any additional integration adaptors are provided on a local basis within the partner's own networks.

Appendix 6: Snapshot of Service Priorities by Partner

The table below summarises by Partner the priorities for services which might use Government Gateway facilities.

Partner:	*Brentwood*	*Braintree*	*Epping Forest*	*Harlow*	*Uttlesford*
Issue					
Your organisation's high-level strategy towards e-payments	b Already have an alternative solution, so obviously not keen to be involved at this stage. Expect to use Gateway eventually	a Need a solution soon, keen to get involved with EOL Government Gateway initiative	b Already have an alternative solution, so obviously not keen to be involved at this stage	a Need a solution soon, keen to get involved with EOL Government Gateway initiative - dependant on timescales of delivery. If indicative timescales indicate lengthy process we may have to utilise an alternative solution.	Already have a solution but very keen at look at what the GG can offer.
Your organisation's most likely/planned e-payments	Currently - Council Tax, Business Rates, Housing Rents, Invoices, Parking Charges	Parking, Special Collections, Council Tax Sundry debtors (all have budgetary approval, all required by November))	*Debit/Credit card payments* (All funds) – Live, *Automated Telephone Payments* (All funds) – Live, *Internet Payments* (All funds) due: September 2004, I*ntranet Payments* (All funds) due: September 2004	C-TAX Rents Planning / Building Control Fees Parking Fines AV's - owner surrender EH i.e. wasp nests etc Planned date: Q1 2005/6. Budgetary support for e-payments.	*Parking* (RFS:TBA, budget: Y) *Licences* (RFS: 04/05, budget: N) *Council tax* (Done) *Business rates* (RFS: Q4/04, budget: Y) *Goods & services* (RFS: Q4/04, budget: Y)
Your organisation's strategy towards electronic viewing of Council Tax accounts	Looking to develop own, but keen to participate in EOLP gateway solution if available	a Need a solution soon, keen to get involved with EOL Government Gateway initiative for the Authentication/Enrolment aspects	a Need a solution soon, keen to get involved with EOL Government Gateway initiative for the Authentication/Enrolment aspects	a Need a solution soon, keen to get involved with EOL Government Gateway initiative for the Authentication/Enrolment aspects	a Need a solution soon, keen to get involved with EOL Government Gateway initiative for the Authentication/Enrolment aspects

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Recommendations on Government Gateway

Partner:	*Brentwood*	*Braintree*	*Epping Forest*	*Harlow*	*Uttlesford*
Your organisation's strategy towards electronic viewing of Council Tax Benefits / Housing Benefits	Looking to develop own, but keen to participate in EOLP gateway solution if available	a Need a solution soon, keen to get involved with EOL Government Gateway initiative for the Authentication/Enrolment aspects	a Need a solution soon, keen to get involved with EOL Government Gateway initiative for the Authentication/Enrolment aspects	a Need a solution soon, keen to get involved with EOL Government Gateway initiative for the Authentication/Enrolment aspects	(none stated)
Details of your organisation's related back-end business systems.					
• Cash Receipting/ Reconciliation	In-house written totally integrated on-line system	Spectrum	Spectrum - Perception 5v4.312.29	PARIS	Radias icon
• Council Tax collection/ management	SX3, integrated with other systems – Housing rents, Cash Receipting, BACS, Financial Management etc	IBS	Anite PS – Orbis Version 6.1	IBS Open Revenues	SX3
• Council Tax Benefits	SX3, as above	IBS	Anite PS – Orbis Version 3.13	IBS Open Revenues	SX3
• Housing Benefits	SX3, as above	IBS	Anite PS – Orbis Version 3.13	IBS Open Revenues / Orchard	SX3

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Recommendations on Government Gateway

Partner:	Brentwood	Braintree	Epping Forest	Harlow	Uttlesford
Any other comments on your organisation's strategy towards use of Government Gateway through some EOLP route	Keen to participate in and adopt joint EOLP approach to use of Government Gateway – for authentication - to be totally successful need pan Essex adoption of uniform solution – especially with CRM integration – whole thing simplified if we all do the same, joint e-payments implementation giving savings through bulk purchase (eventually!) as enumerated in various Keith Archer oeuvres – we only need to do so many things only once not 10-12 times.		The Council's main concerns are: a) Cost of the solution (including on-going costs) b) Customer take-up of a central government (big brother!) gateway c) Back office supplier co-operation d) Back office integration	Intelligent forms to be utilised Customer access to our CRM system to self help / serve and raise enquiries / complaints Utilise formal middleware to translate client based data for messaging to all line of business applications - life events	

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Appendix 7: Hampshire CC Costing for Initial E-Payment Service

(extract from their business bid, by kind permission).

We now have prices for DIS boxes from Microsoft, IBM and SoftwareAG. All have received technical accreditation from the OeE. Two of these were received on 13 March and have yet to be properly evaluated. Indicative prices for a live and test DIS including 1 years support are:

Microsoft:	£18,500 to £21,000	plus £6,400 for training, consultancy
IBM:	£35,000	excl training and consultancy
SoftwareAG:	£50,000	plus £15,000 for 20 days support

Year 1 installation and support (based on Hants CC quote, Southampton's quote is awaited):

Installation	£2,000
Annual support	£10,000

These costs provide the basic Gateway infrastructure. There would need to be further development to implement any ePayment and authentication services. Indicative cost of supplier consultancy is £1000 per service.

(end of extract)

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Appendix 8: Hampshire Partnership Summary of Government Gateway Transactional Costs

General transaction - A transaction is effectively any sort of submission through the Gateway for instance sending your New Tax Credits application from the relevant portal through the Gateway and being delivered reliably, securely, and most importantly legally (non-repudiation) to the service owner. The service owner gets the above benefits and is able to programmatically handle the business process therefore enabling end to end automation and exception based BPR, with all the usually associated improvements.	49p
Authentication – per authentication transaction	24p
Payment – per transaction	9p
Text message	9p
DotP – The OeE's content management system and central infrastructure designed to host multiple government websites.	The benchmark running cost for a site is 5p per page view, but the charge will be assessed by website, and agreed based on the degree to which existing templates are reused.

These prices will be held until 31st March 2006. Costs are subject to rise in prices and will be effected by the CEL & RPI indexation .

The coverage of the charge provides for the following:

- Integration and implementation of additional agreed services put on Central Infrastructure[5]. The first service will require a one-off setup/connection fee and is dependent on the complexity of the service required.
- Access to new functionality that is developed for use on Central Infrastructure.
- Technology refresh and appropriate upgrades.
- All hardware and software license and the maintenance.
- All approach security patches (applied in a timely fashion)
- Reactive team to minimise down time.
- Service levels of 99.9% for both website and applications
- Monthly reports and service review meetings.
- Unlimited helpdesk support (24/7).
- Account management and business support.

(end of extract)

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[5] Subject to the design complying with interoperability standards for Government Gateway and DotP.

Appendix 9: Management Facilities Provided on Microsoft DIS

Source: SolidSoft, August 2004.

Out-of-the-box DIS 2004 comes with a "Health Check Page". This shows all BizTalk objects' status at a glance and lists any GovTalk messages currently in the system. Information on the messages, such as Message Type, Instance ID, Service Name, Status, and Error Description are shown for each message.

If there are any suspended messages, a set of buttons will appear to offer facilities to deal with suspended messages only. The buttons allow:
- saving of messages - this allows them to be examined then resubmitted by manually copying them to a file receive location;
- clearing of messages - all suspended messages are cleared;
- resubmission of a message from the Gateway (internal "department" messages can only be saved or cleared).

Active or other in-progress message states are not affected by the suspended document buttons.

Further administration can be handled by Health and Activity Tracker (HAT) that is included with the BizTalk part of the DIS installation (a standard part of BizTalk). This offers more comprehensive tools for dealing with the messages within the DIS.

(end of extract)

Appendix Two

COMMERCIAL IN CONFIDENCE

DELIVERABLE

ADDENDUM TO - RECOMMENDATIONS ON GOVERNMENT GATEWAY

e-Authentication

Release: Issue 1
Date: 22nd September 2004

PRINCE 2

Author: Gordon Kerr

Owner: Gordon Kerr

Client: Malcolm Cheshire for EOL E-Champions

Document Number: 20040922 EAUTH Deliverable-Addendum

Brief Summary

This addendum to 20040910 EAUTH Deliverable-3 updates the Cost Summary tables within that report, based on information received since the report was issued.

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Cost Summary – Updated Tables

Capital:

Item	Description	Item Cost
1.1	Test + Live DIS (GCAT item) – includes installation, commissioning and support for first year. Includes BT costs for year 1.	£51K
1.2	Initial integration consultancy from Microsoft partner (Solidsoft)	£30K
1 (s/total)	**Initial Installation of Central DIS Environment (shared cost)**	**£81K**

2.1	Integration (Solidsoft) per partner per business service (*max – this could be much lower*).	<=£30K
2.2	EOLP Project Manager (shared cost for 6 months, year 1). Nb Further resource into 2005/2006 dependent on agreed implementation plan.	£15K
2.3	EOLP Technical Consultancy (shared cost for 6 months, year 1). Nb Further resource into 2005/2006 dependent on agreed implementation plan.	£10K
2.4	EOLP Test/Live DIS environment manager (shared cost for 6 months, year 1)	£10K
2.5	Partner's local IT integration/support	Extra, not included
2.6	Partner's website changes	Extra, not included
2.7	Modifications/additions to partner's business systems	Extra, not included
2.8	Training of partners' staff, changes to Help Desks	Extra, not included

Revenue

Item	Description	Item Cost
1.1	Government Gateway – registration fee (annual) – payable by each partner	£5K/partner/year
1.2	Government Gateway – transactional fees (yearly) – payable by each partner	Volume dependent, usage-based payment
1.3	Additional IT support required within a partner	Not included
1.4	Additional website support within a partner	Not included
1.5	Additional support for business systems within a partner	Not included

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Item	Description	Item Cost
2.1	First-line IT support and hardware/software support for central DIS environment (from year 2)	£4.5K pa shared
2.3	EOLP Test/Live DIS environment manager (from year 2)	£5K pa shared

- end of document -