Infrastructure and Projects Authority

Guidance for Departments and review teams

Assurance and approvals for agile delivery of digital services

v1.2

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This information is also available on the IPA website:
https://www.gov.uk/government/organisations/infrastructure-and-projects-authority

Contents

Contributors

IPA wishes to thank the Government Digital Service (GDS) for their support in developing this guidance.

1. Introduction

The Government's Digital Strategy[1] proposes that wherever possible, services should be provided through the digital channel, as opposed to face-to-face, post, call centre etc., and that these services should be developed in an agile way. Furthermore, an increasing number of larger business transformation programmes are using agile ways of working to improve outcomes, and in these cases multiple agile developments may be taking place alongside other projects and business changes.

This creates a growing need for assurance of agile delivery and new challenges for departments and the assurance reviewer community. It requires those involved to adapt their governance, assurance and approvals processes, and to consider different indicators of success. The usual principles of assurance remain but assessment relies more on observation and engagement with the team and stakeholders, rather than reporting and document review.

For all IPA assurance reviews of projects and programmes that are using agile ways of working, it is essential that at least one reviewer on the team has experience of delivering in an agile way.

The primary purpose of this document is to provide reviewers with guidance on the assurance of digital projects where agile ways of working are being used. It is equally applicable to non-digital projects and should also be used where agile teams are part of a wider transformation programme alongside other projects and business changes.

With the exception of the mandatory approval requirements set out in section 5 this guidance does not aim to set out hard and fast rules. Every project is different and the principles set out in this guidance should be applied sensibly and appropriately.

Considerations for planning and managing assurance reviews are included and suggested areas for reviewers to probe are provided in Annex A. The guidance begins with an overview of the agile approach used in government and, recognising that the language of agile varies with different methods and tools, a glossary of terms is also provided.

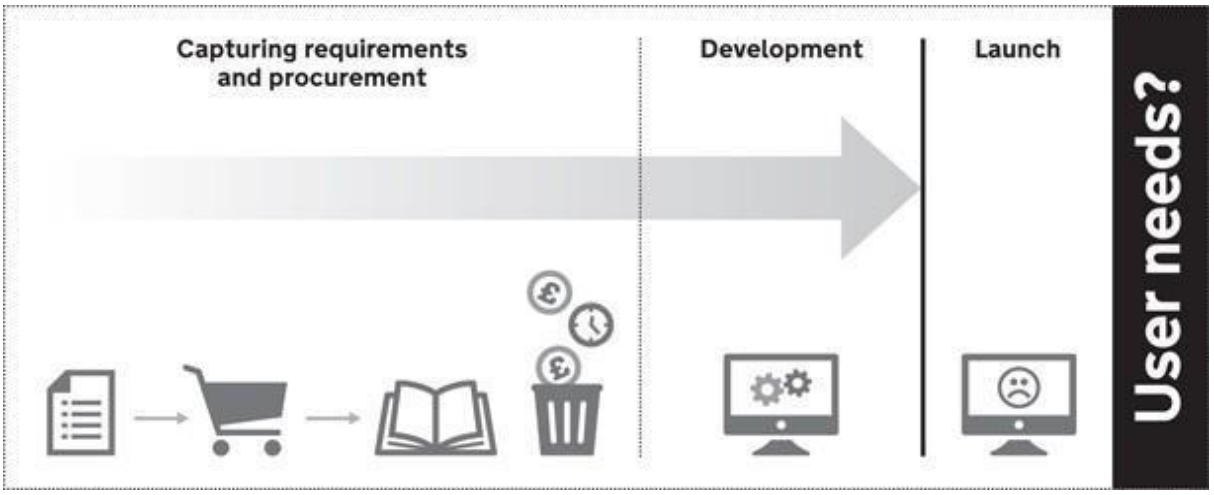
[1] https://www.gov.uk/government/publications/government-digital-strategy. The GDS Service Design Manual https://www.gov.uk/service-manual proposes agile as the most appropriate approach for developing digital services.

2. Agile Overview

Agile is an umbrella term that covers a range of iterative software development methodologies, e.g. SCRUM, XP, DSDM and, more generally, a culture and way of working within teams and with stakeholders. The Government is agnostic about methodologies, but for further insight into the Government Digital Service (GDS) approach to agile delivery see https://www.gov.uk/service-manual/agile/index.html.

Agile is different to a 'waterfall' approach, which seeks to capture up front the detailed requirements for a service and assumes that little will change. Waterfall was commonly used in the era of procuring large IT outsource contracts when the aim was to go to the market with as much detail as possible in order to evaluate the best offer and enter into an agreement to deliver contracted services. However, solutions designed and built on an assumption of minimal future change have proven to be inflexible and costly to change. Another feature of waterfall is that user testing, business readiness testing and acceptance testing, occur late in the development process, which can lead to costly re-work and delays.

The waterfall approach is shown below:



Agile recognises that user needs change and builds in from the outset the ability to change priorities as more is understood about the service. The development approach is one of exploration where refinements are made and details added as the delivery progresses. With this in mind, the solution architecture is developed to enable this flexible and incremental approach to be adopted.

Testing is built into the iterative development and release process so that functionality and benefits can be delivered to the business early, which leads to further user feedback and refinement of the solution.

To an extent, assurance is also built into the process as a result of increased collaborative working on teams and with users. However, there remains a need for external assurance and this is covered in detail later in this guidance.

When to use agile

Government policy is to use agile to deliver digital services. However, the benefits of working in an agile way are not restricted to digital services. For changes where detailed requirements are unclear or likely to change over time, or where solutions are likely to be innovative or custom built, agile ways of working may help to improve outcomes.

On larger transformation programmes it is likely that a mix of approaches will be required that are appropriate for the different products, services and capabilities being delivered. As such, a 'one size fits all' approach should not be followed. **In these cases it is important that sufficient time is spent up front developing appropriate delivery strategies and plans, for example by value stream mapping[2], and that good programme management disciplines are applied throughout the overall transformation.**

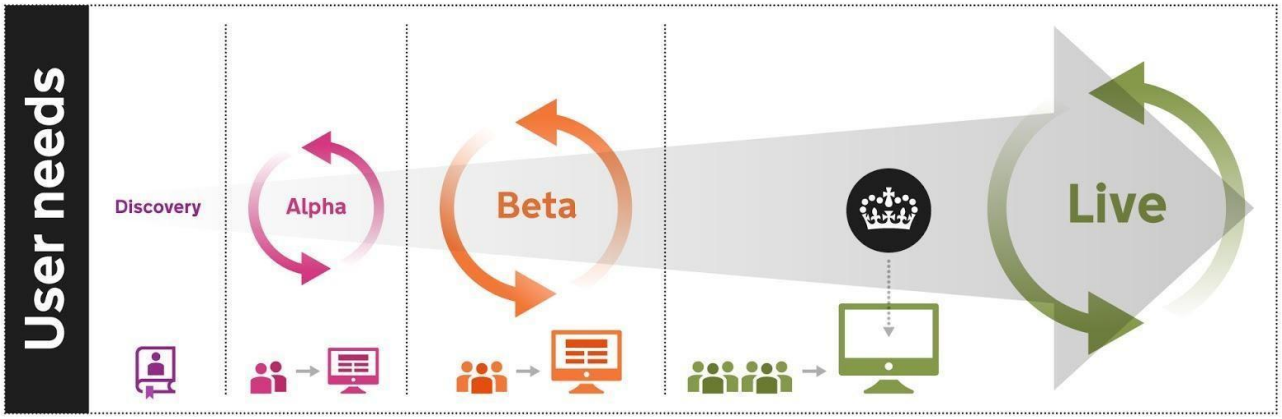
Departments should contact GDS and IPA for further advice and support on agile ways of working and how they can be adopted.

Phases in the agile development lifecycle

Building a digital service is a complex task. Breaking development into phases minimises risk and builds understanding of what works and what does not. This approach allows the team making and operating the service to start small, learn fast, and to quickly provide improved value to the end user.

The agile phases are shown below:

[2]Further information and on Value Stream Mapping as a technique to develop strategy can be found at http://www.wardleymaps.com



Discovery - A short phase to start researching the needs of the service users, find out what should be measured and explore technological or policy-related constraints. One of the main differences is the early focus on identifying high-level requirements, which are referred to as 'User Needs'.

Alpha - A short phase in which solutions are prototyped to meet identified user needs. Testing with a small group of users or stakeholders and getting early feedback feeds into the design of the service. Developing a prototype provides early feedback, which helps check understanding of user needs and test initial thinking about the solution design. On completing the Discovery and Alpha phases, the team will have a good idea of the services, user needs and solution architecture and a plan for 'Beta into Live'.

Beta - The Beta phase is longer and focussed on developing against the demands of a live environment and understanding how to build and scale while meeting user needs. This phase also involves releasing a version to test in public. Initially, this may be in the form of a 'Private Beta', where the project controls who can use the service by invitation only before moving to a 'Public Beta', which is open to all users. In resource terms, elapsed time in the Beta phase is the largest part of the life of a service before it goes into full live operation.

Live - The work doesn't stop once the service is live. The team will iteratively improve the service, reacting to new needs and demands, whilst meeting and exceeding targets set during the development.

Retirement - Even the best services eventually reach retirement and this stage should be treated with the same level of care as was invested in the building and maintaining of the service and transition from previous systems.

For more detail of the phases, please see https://www.gov.uk/service-manual/phases.

Transformation Programmes with Agile Components

Developments of digital services are often part of a wider transformation of the business involving organisational, operational, commercial and infrastructure changes. As such, it is possible that multiple agile work streams will sit alongside other projects and business changes within a coherent programme designed to meet a business need.

In these cases, it is critical that the core disciplines of managing a wider programme of changes to meet a strategic aim are maintained, including:

- establishing a clear vision of the future that is understood and shared by stakeholders;
- maintaining a strong focus on business benefits and any critical dependencies;
- establishing an overall design in sufficient detail to plan and align the work of agile teams alongside other projects and business changes;
- breaking delivery into phases that will deliver benefits early, mitigate key risks and allow lessons to be learned; and
- establishing a clear strategy and plan for transitioning from current systems, operations, organisations and suppliers to new arrangements.

Working in an agile way on large transformation programmes may present additional challenges that are specific to agile, including:

- establishing a culture of incremental delivery, learning and evolution of solution within the business and wider stakeholder community;
- establishing a culture of empowerment, and the associated governance and reporting arrangements, that allows teams to ‘get on and deliver’;
- maintaining the alignment of multiple agile developments with strategic business objectives and other related projects and business changes;
- establishing and managing the hosting, development and testing environments required to work in an agile way; and
- managing the frequent release of changes and improvements to the business from multiple agile teams.

The Programme Health Check section in Annex A suggests areas to probe and ways to evidence that robust programme management is in place and that the organisation is working effectively in an agile way.

It should be noted that all projects and programmes are susceptible to common causes of failure and that the application of any approach, including agile, is not in itself a cure all.

Regardless of the approach used, Senior Responsible Owners (SROs) and Programme Directors (PDs) should work with their stakeholders, delivery teams and suppliers to ensure that common causes of failure do not exist on a project or programme, including:

- lack of clear link between the project or programme and the organisation's strategic priorities, including agreed measures of success;
- lack of focus on benefits and user needs;
- lack of senior management and Ministerial ownership and leadership;
- lack of effective engagement with stakeholders;
- lack of skills, experience and proven approach to programme and risk management;
- not breaking development and implementation into manageable steps;
- evaluation of options and proposals driven by initial price rather than long-term value for money, especially securing delivery of business benefits;
- lack of understanding of and contact with the supply industry at senior levels in the organisation; and
- lack of effective relationships and collaboration between the business, project teams and the supply chain.

Departments should contact IPA and GDS for further advice on using agile on transformation programmes and may also wish to refer to guidance in the public domain on the subject[3].

3. Assurance Planning

Whilst working in an agile way incorporates a level of assurance into development iterations, teams should also plan for additional, independent assurance. This is particularly important if the agile delivery is an integral part of a wider change. People who are not directly involved in the day-to-day delivery of a service may spot things that people in the team are less likely to see and may bring in valuable experience from similar initiatives.

Independent assurance can:

- provide extra confidence to the delivery team and people who govern the project that they have a clear understanding of progress;
- identify improvements that could increase the chances of successful delivery; and

[3]Scaled agile framework 3.0 for agile programmes and portfolios http://www.scaledagileframework.com/ DSDM agile programme management methodology https://www.agilebusiness.org/what-is-dsdm

- look at delivery and governance across multiple teams and assess how effective it is.

However, it is important that independent assurance does not impede delivery and as such it should be:

- proportionate to the service phase and scale;
- aligned to the governance principles for digital services;
- based on mutual trust between the team and those involved in the assurance and
- open and transparent, with observations or recommendations available to everyone.

The project should have its own assurance process e.g. oversight by the project or programme office, management reporting, and governance oversight. Assurance may also be provided by specialists elsewhere in the organisation, e.g. legal, technical, content and design. In an agile environment, it is likely that these people will be working as an integral part of the project team as and when required.

Where more than one team is involved in developing a service, this assurance should:

- help ensure the service as a whole is healthy and set up for success;
- take part in coordination activities (e.g. show and tells or stand ups) to observe interactions and assure that cross-team dependencies, risks, and opportunities are being managed appropriately;
- assess whether any underspend is leading to problems with the service delivery or whether overspend means the service can still generate sufficient benefits;
- bring together the outcomes from assurance activities across the service to get a complete picture;
- look for common problems and risks across the service or organisation and help ensure they are addressed; and
- observe drift from an overall vision and goals that people who govern and individual teams might not notice.

Government Digital Service assurance

To assure the quality of digital services, GDS introduced the Digital by Default Service Standard (DbDSS). See https://www.gov.uk/service-manual/digital-by-default.

The DbDSS sets out criteria that have to be met by all new or redesigned transactional government digital services. This GDS assurance also contributes to the Cabinet Office controls process and if the GDS assessment panel does not pass a service, it will not be awarded the standard or appear on GOV.UK.

Services with more than 100,000 transactions per year are assessed by GDS. Services with fewer than 100,000 transactions a year are assessed by a team within the department responsible for the project.

DbDSS assessments happen at 3 points in the development of a service:

- at the end of the alpha stage;
- when the service is ready to go to public beta on GOV.UK and
- at the end of beta when the service is ready to have its beta branding removed and be fully live.

After an assessment, the panel provides feedback to the service team, including where they might need to improve in order to meet the standard. Teams can use the criteria in the standard and the service manual to help focus and prioritise their work. Assurers from within the department can also use the service standard as a basis for their review activities.

Under Cabinet Office spend controls, GDS assures all technology related spending over published thresholds. New projects should speak to GDS early on to agree appropriate points for approval and to get advice on shaping spend control requests.

Infrastructure and Projects Authority assurance

The Infrastructure and Projects Authority (IPA) provides independent assurance for the Government's major projects and programmes, which are defined as those which:

- need investment above a department's expenditure limits; or
- introduce policy that requires new primary legislation; or
- are particularly innovative or contentious and may have higher delivery risk.

The IPA assures projects through Gate Reviews (Thereafter referred to as Gates) or Project Assessment Reviews (PARs). Gate Reviews take place at significant points during the project or programme lifecycle, whereas PARs are bespoke and are used to inform a Major Project Review Group panel meeting.

Timing of assurance activities

Early engagement with all assurance parties is essential, particularly GDS and, if the scale of the change is likely to be significant, the IPA. Where there is potential for a major project or programme, IPA opportunity framing support should be considered to assess the organisation's readiness to start the project or programme and whether they are set up to succeed.

An Integrated Assurance and Approval Plan (IAAP) should be established as part of the Discovery phase setting out how and when independent assurance will be provided and how this supports key approval points. The IAAP should be developed jointly with the assurance providers and periodically updated as appropriate throughout Discovery, Alpha,

Beta and operational service phases. The IAAP should be approved by the Department, the IPA and HM Treasury.

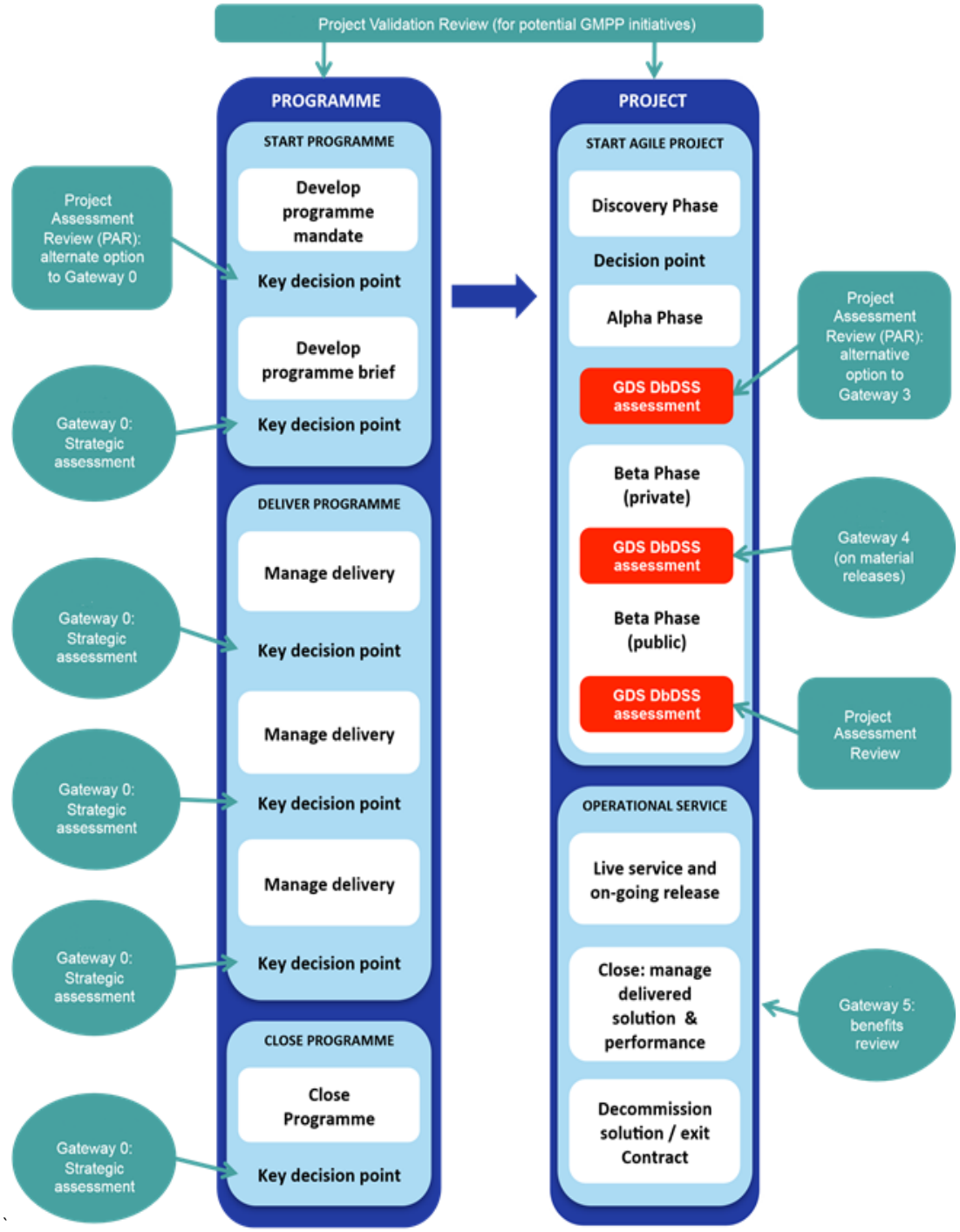
In most cases, two of the GDS DbDSS assessments will align to IPA reviews (Gate 3 & 4 Reviews). Therefore GDS and IPA should work closely to ensure that duplication is avoided. It is recommended that wherever possible a co-ordinated DbDSS/IPA review should be used and this can take the following format:

- Day 1 – DbDSS assessment undertaken with a member of the IPA assurance team in attendance. The IPA assurance review team meets following the assessment to reflect on the findings and implications for the IPA review.
- Day 2 & 3 – The IPA assurance review (interviews, workshops and observation) is undertaken with a member of the GDS assessment panel as part of the review team.

Where a programme includes multiple agile streams, or where agile projects are part of a wider transformation programme, consideration should be given to the timing of IPA assurance reviews and GDS DbDSS assessments and this should be agreed with IPA and GDS on a case-by-case basis.

The recommended timings of IPA assurance reviews are shown in the following diagram:

Figure 1: Planning IPA reviews



Organising a review

The typical lead time (12 weeks) for arranging an assurance review is not necessarily practical when working in an agile way, so early engagement is essential. The IAAP should be developed during the Discovery phase and periodically reviewed and updated to ensure it remains valid as the delivery progresses. Regular discussions with GDS and the assurance organisers (departmental or IPA as appropriate) are essential.

Review teams and review schedulers need to be aware of agile terminology. Review schedules need to include time to walkthrough relevant documentation and delivery output in situ e.g. 'Kanban walls' and the current state of the delivered solution. The review team may wish to capture images on a camera where documentation does not exist for subsequent reference during the review.

Review teams should always include someone with practical experience of delivery using agile approaches. This may be a Subject Matter Expert, who may not be a fully accredited reviewer.

Typical project documentation may not be in use for the management of the agile delivery, so reviewers will need to observe team activities, such as stand up and show and tells, in addition to reviewing artefacts, some of which may be web-based documentation e.g. product backlog and sprint plans. Reviewers should expect to see the work of teams clearly linked to business priorities, e.g. through a backlog, and to assess the speed of delivery as a way of validating future plans. **For programmes where digital services are enabling a wider business transformation, and those where services integrate with legacy systems, the review team should also expect to see clear plans, architecture and strategies for the overall change.**

In addition to project and programme roles, when assuring an agile delivery of a digital service the following roles[4] should also be involved:

Service manager - accountable for all aspects of the current and future service, including the non-digital channels. They are the keeper of the Service Vision that will guide the team to deliver a service aligned to that vision. The service manager is responsible for ensuring that the service meets user needs, and is responsible for managing channel shift to the digital channel.

Product manager - a service may be broken down into a number of products. Each product manager is responsible for the effective development of their specific product, i.e. meeting user need both in itself and as part of the overall service.

[4]These are the names used by GDS for the roles. There are many methods and tools under the agile umbrella and some use different names for the same roles.

Delivery manager - responsible for ensuring that teams clearly understand what is expected of them and that sufficient resources are available to effectively deliver all products/services.

Good communication/engagement with teams and other key stakeholders is critical if effective agile delivery is to be assured. Reviewers will benefit from observing the ways the delivery teams work including the management approaches adopted.

4. Assurance Reviews

Pre-discovery phase

Where there is potential for a major project or programme, opportunity framing support from the IPA should be considered to test whether the organisation is ready to initiate a project or programme, be that agile or otherwise.

Where there may be a potential change that may adopt an agile approach, the following areas should be considered:

- understanding of user needs and value chain;
- clarity of vision, desired outcomes and service proposition;
- understanding and commitment of the organisation and stakeholders to work in an agile way;
- availability of skills required to deliver using an agile approach;
- mechanisms to be used to actively monitor progress and manage risks and issues;
- management of delivery impediments and blockers; and
- implications for governance including funding, assurance and approvals, timely decision making and delegation of authority.

Discovery and Alpha phases

During the Discovery phase, which can last from just a few days to many weeks, the team will explore the existing service landscape, develop user stories and undertake early product development. These activities will inform the feasibility of taking the development forward, including where it is appropriate to use an agile approach. A decision at the end of Discovery to not proceed, will lead to either a fundamental re-think or the start of another Discovery phase. If the decision is to progress to Alpha, there will usually be a GDS DbDSS assessment and approval. There is no requirement for an IPA review at this point.

Products will be developed further during Alpha and at the end of the phase a formal decision is required before moving to Beta (development build). An IPA review, usually a PAR, is appropriate at this point to support the departmental HMT investment approval. At this point, areas to probe should include:

- Prioritisation of user needs and how this is being used to drive development;
- Availability of skills required to progress developments to minimum viable products;
- Empowerment of agile teams to 'get on and deliver';
- Strength of relationships and collaborative working across teams and suppliers;
- Understanding and commitment of the organisation and stakeholders to work in an agile way;
- Consideration of any legacy integration issues or other significant interfaces and dependencies;
- Speed of delivery and how this is being used to inform future plans;
- Readiness of end users for the transition to the new service; and
- Updating of the business case based on learning from the Alpha phase.

Annex A includes further questions review teams may wish to consider when undertaking a review at the end of Alpha.

The review team must be cognisant of the coverage of the DbDSS assessment to ensure that the areas to probe are appropriate and do not overlap with those areas already assessed. It is recommended that a GDS representative from the DbDSS assessment team is part of the PAR team and vice-versa to reduce the risk of duplication. The primary focus of the review should be forward looking, including readiness for the next phase (Beta).

During the Discovery and Alpha phases the IAAP will be updated and the Programme Business Case[5] developed.

Beta and Live service phases

During Beta it is likely that there will be many product releases. IPA assurance reviews (Gate 4 Review) would normally be only undertaken for material releases. Such releases are primarily those which are public facing, have material impact on business operations or may attract reputational risk for the organisation should significant issues arise with their

[5]A 'Programme Business Case' should be used where an agile approach is being followed and is generally updated on a regular basis e.g. every 6 months. If the scale of the project or programme is significant, an Outline Business Case may still be required. HMT spend teams will advise on the business case requirements and approval process as these vary by departments and scale.

use. Particular attention should be given to the point at which the project moves from Private Beta to Public Beta.

Consideration should be given to timing of Gate 4 reviews and DbDSS assessments to avoid overlap and duplication as set out in Chapter 3. Areas to probe during Beta and Live phases should include:

- Continued prioritisation of development on delivering Minimum Viable Products and prioritised user needs;
- Understanding of non-functional, integration and operational readiness requirements and plans to test them;
- Speed of delivery and how this is being used to inform future plans;
- Effectiveness of the organisation and stakeholders working in an agile way;
- Readiness of end users for the transition to new services;
- Plans to manage and measure channel shift and
- Control of budget and business case.

Annex A includes further questions review teams may wish to consider when undertaking reviews during the Beta and Live phases.

Programme health check

Where agile teams are part of a wider transformation, a Gate0 Review should be considered to assess the health of the overall programme. If there is a requirement for approval of the Programme Business Case (PBC), then such a review should be timed to support that approval where possible. This will be a mandatory review if the business case requires HM Treasury approval.

Areas to probe at this stage (in addition to a regular Gate0 review) should include:

- Existence of a coherent strategy, design and architecture for the overall transformation and a means of keeping agile teams and products aligned;
- Understanding of any key milestones, dependencies and decision points and how agile developments are being scheduled and managed within the overall programme plan;
- Alignment of agile teams and developments to overarching business objectives and a means of prioritising benefits and user needs across the programme;
- Plans for managing the transition from current operations to new in an incremental way and continually learning lessons; and
- Appropriateness of the tools, methodologies, resources and ways of working deployed for the various components of the programme, i.e. not ‘one size fits all’.

Annex A includes further questions review teams may wish to consider when undertaking reviews of programmes with agile components.

5. Approvals

Many agile developments of digital services across Government fall below the thresholds for the Government Major Projects Portfolio (GMPP) and will be subject to Department's own internal assurance. IPA are typically involved in assuring agile delivery when it:

- requires HMT spend approval;
- is part of a GMPP Programme; or
- is particularly novel or contentious.

Government spend controls from the Cabinet Office and HMT equally apply to agile projects. HMT guidance is that departments can spend up to £750,000 from within their own budget on Discovery and Alpha phases to inform a more detailed investment case, typically the first iteration of a PBC.

All change projects are subject to both internal departmental approvals and, where appropriate, to Cabinet Office and HMT spend controls (see Annex C). In the case of agile delivery of digital services:

- Office of the Chief Technology Officer (OCTO) approval is required prior to commencing a Discovery phase;
- Depending on the size and nature of the project, Cabinet Office Information and Communications Technology (ICT) spend approval may be required for the Discovery, Alpha and Beta phases; and
- DbDSS assessments must be completed at the end of Alpha and Beta phases before further development can proceed.

Business Case approvals are required at the end of Alpha and Beta phases and, where applicable, for annual spend on programmes. A reference to the HMT guidance on business cases can be found in Annex C.

Both the Cabinet Office control team and HMT spend teams should be consulted as early as possible in the change process.

Annex A – Areas to Probe

Programme Review – Gate 0 Review

The following areas to probe are supplementary to the standard Gate 0 Review guidance and for use where a programme has agile components.

It is likely that agile projects within the programme will be at different stages and therefore those undertaking assurance should also consider the areas to probe for the discovery, alpha, beta and live stages as required.

Areas to Probe	Evidenced by
Is there a compelling vision for the programme that is clearly aligned to the organisation's strategy?	- The aim and purpose of the programme is clearly and consistently articulated in documentation and by stakeholders - There is a consistent view (documented and amongst stakeholders) of what constitutes success and how it will be measured - The links to wider departmental and government strategy are clear and understood by stakeholders

Is there an overall design, in sufficient detail to enable the scheduling and alignment of work to be delivered by agile teams?	- The design is captured in one or more of the following:
	  ○ Target operating model setting out the capabilities required to deliver benefits to users
	  ○ Blueprint or Business Architecture Model setting out the 'to be' organisational, business process, systems and data requirements
	  ○ End-to-end process model setting out user needs and the required user experience in user stories or epics
	- The high-level, non-functional requirements are articulated (regarding scale and resilience)
	- Plans are in place for managing dependencies and interfaces with other systems and organisations
	- Integration requirements are understood and tested for during development iterations

Are the benefits clearly defined and being used to prioritise the development and delivery of capabilities to the business?	- Benefit maps setting out the capabilities required and the changes (business, technical or otherwise) that will deliver them - Benefits have owners in the business, and there are plans for when they will be delivered and how they will be measured - There is a single backlog of user needs being used to drive the work of agile teams

Has delivery of the programme been split into phases designed to deliver benefits early, learn lessons, and mitigate key risks?	- Benefits plan setting out when (and how much) benefit will be delivered to the business - Programme plan setting out how agile projects fit with other projects and business changes to deliver benefits to the business - Roadmap setting out when capabilities will be available and any dependencies outside of the programme - Phase containment plan setting out how iterations will be time bound (and stopped if necessary) and how lessons will be learned at each stage and applied to subsequent phases
Are there plans (and contingency plans) in place to transition from current systems, operations, organisations and suppliers to new?	- Overall plan and timetable for delivering the end-state and any key interim milestones - Strategy and plans setting out how the business will continue to be managed during transition, including any periods of parallel running and integration required between old and new systems - Commercial strategy and plans for exiting current contracts incrementally as new functionality becomes available - If different generations of systems will co-exist and rely upon each other for any period, are plans and contracts adequate to support this?
Is there a robust and up to date business case (or plans to prepare one) at the OBC level of detail?	- Early agile developments have been used to inform the business case and engage and educate stakeholders in agile ways of working
Does the programme have (or have access to) the skills, tools and process in place to manage the agile development environment?	- There is a process for releasing changes from multiple agile work streams into the business (e.g. a 'release train') - There is established capability (commercial and technical) for managing the agile environment including hosting, security, ,development resources, tools, environments, and releases - There is a single backlog of prioritised user needs (defined as user stories) being used to drive the work of agile teams
Does the programme have the skills and resources in place to manage agile teams alongside other projects and business changes and to integrate agile deliveries with legacy systems if necessary?	Project managers are used alongside agile teams Delivery managers are used to ensure integration with the wider programme organisation and resolution of any issues Collaboration and consistency across agile teams is facilitated (e.g. through cross project disciplines or communities of practice) Business change and communication functions are present to support the implementation of new functionality There are processes in place to ensure that product owners remain aligned with strategic business objectives Are contractual responsibilities clear over the integration of agile products with legacy systems?

Does the programme governance allow agile teams to 'get on and deliver' without interference or delays?	- Agile teams have delegated authority to develop functionality based on prioritised user needs (best observed in the agile team working environment and processes) - There are processes in place for prioritising user needs based on business benefits - 'Progress' reporting includes quality measures including strength of relationships, staff motivation, and code quality - The programme director (PD) and senior responsible owner (SRO) have a means of keeping abreast of fast moving progress (e.g. regular attendance at agile ceremonies rather than lagging reporting) - Stakeholders understand and accept that on-time delivery of an acceptable solution is the primary goal for the project - Stakeholders understand agile and the organisation has a culture that supports agile ways of working

Pre-Discovery – Opportunity Framing

Areas to Probe	Evidenced by
Is there a clear and agreed strategic vision and outcomes that the changes are going to deliver?	- Blueprint & evidence (e.g. from interviews and paperwork observations) showing a clear understanding of what strategic outcome is required
Is agile the most appropriate approach to delivery?	- Degree of understanding of when agile is appropriate, and evidence of the decision making process
Is the culture of the organisation ready to deliver in an agile way?	- Staff, from project teams to board level are fully aware of the ways of the implications of an agile way of working, (e.g. through training and regular communications) - Reporting and governance structures are ready both within the team and to wider stakeholder communities
Do all the stakeholders fully understand what an agile approach entails, including the resource commitments, empowerment and governance arrangements that will be required to enable effective delivery?	- High level of understanding shown, degree of training/awareness of key stakeholders - Key participants are trained and ready to start the Discovery phase - Engagement with the Department Chief Digital Officer and GDS - Evidence that the ramifications (e.g. empowered staff and evolving/changing requirements) have been considered

Have the implications on time, cost and resources for an agile development been considered?	- Outline costs of adopting an agile approach considered against delivery requirements - Understanding of what other 'business as usual' activities assigned resources are working on - Recognition that plans are developed iteratively - Early engagement with GDS
Do the resources have sufficient experience and capacity to deal with an agile approach	- Recognition of time, skills, and experience required, and the need for staff rotation during the programme
Is there a clear understanding that through using agile, some development may be discarded (written off) or approaches changes as the development progresses?	- The recognition of disposal of early iterations is accepted and that longer-term planning is not always possible
Can business as usual activities be effectively maintained if key resources need to be used to support an agile development?	- The resourcing plan for the project/programme should make clear where the resources are coming from, including whether they are additional or existing resources
If more than a single agile development is required has the organisation the capability and capacity to manage simultaneous developments?	- Resourcing plans should make clear what resources are available and what their role is - Capacity and capability should be subject of challenge
Are the appropriate reporting systems in place?	- Project management office (PMO) and upward reporting arrangements are clear and timely, and show progress and slippage in a way that is understood by the readers
Is the development in line with the wider change portfolio?	- Comparison of the plans with a wider change portfolio/strategy
If there is a business critical delivery date, and are the teams clear about the quality of deliverables expected by that date?	- If dates or quality are compromised, all stakeholders are aware of the implications - Consideration has been given to alternative development approaches

End of Alpha – Gate 3 Review

Areas to Probe	Evidenced by
Have resource capability and capacity requirements been assessed for Beta for both production development and business readiness?	- Capability and capacity assessment completed and resources identified and secured
Are the resources available to maintain momentum or plug any gaps in the multidisciplinary teams that may develop during the Beta phase?	- The resourcing strategy and plan is appropriately aligned to the demand profile - Witnessing stand-ups etc. will demonstrate whether or not everyone who needs to be there attends
Are practices in place to ensure emerging benefits (or dis-benefits) can be captured and built into the business case?	- Benefits management capture arrangements in place
Are roles and responsibilities and authority delegations appropriately and clearly defined?	- A clear organisational model shows roles and responsibilities - Challenge about how in reality the structure works, either through interview and/or observation of the team
Has the risk of resource 'burn out' been given due consideration? What are the planned mitigating actions/resources if this issue develops/increases?	- Existence of policy and understanding of the potential for burn out aligned to defined mitigation - Details of individual tasking against time will support such considerations (should be made subject of challenge via interview)
Has the training of operations teams (e.g. service delivery teams, case workers, administrative staff and front line staff) been considered and planned?	- The existence of a demand profile or similar product that outlines the skills and experience required to ensure delivery - Evidence that suitably qualified/experience external resources are being brought in to address a short term skills shortage - Skills and knowledge transfer should be considered
Are end users being adequately prepared for the transition to the new/redesigned digital service?	- The existence of user research and engagement - The existence of a communication strategy that defines who the customers and end users are, and how they will be engaged

Has adequate time been allowed in the Beta schedules to fix faults (technical debt) and are there arrangements for proactive monitoring and management of any slippage?	- Tolerances given to teams to undertake defect remediation and refactoring - Monitoring in place to assess progress - Controls are in place to ensure defect resolution gets an adequate priority alongside the development of new functionality
Are appropriate business change management processes in place?	- The product backlog is regularly monitored and where tolerances exceeded, an appropriate escalation path in place
Are business users sufficiently empowered to effect change if required?	- Effectiveness of product managers in delivering change in the business
Is there an effective system to track and report deliverable progress and evidence of corrective action when appropriate?	- Backlogs are monitored, with evidence of realignment if required - Earned value is properly measured - Timely reports/dashboard to the programme board/steering group
Are there legacy systems, and the plans to transfer data, integrate with them and exit them adequate?	- Review of plans to establish viability of approach
Are there arrangements in place to ensure changes to external dependencies can be effectively fed into Beta developments?	- Coordinated approach to dealing with external dependencies
Is the incremental planning approach potentially overloading resource or schedule?	- Monitoring of progress and backlog
Is the budget under control? Is there a risk that a higher spend 'burn rate' is required e.g. for developers/coders to maintain pace?	- Examination of financial based management data - Evidence of good, regular financial data, ideally linked to each Sprint cycle - Reports considered at programme board/steering groups

End of Beta/Pre-Live – Gate 4 Review

Areas to Probe	Evidenced by
Is any remaining development focused on the minimum viable product?	- Control of product backlogs
Is there clearly defined empowerment (decisions & budget) for those required?	- Business case or programme structure document may reveal detail of the relative empowerment of individuals and groups (ToR)
Organisational design. Does the live service operating model provide the blend of resources required to deliver the MVP?	- Resource plan mapped against the operating model and required resourcing or the MVP

Are non-functional requirements (NFRs) expressed in a manner which can be tested and Is testing of non-functional requirements adequately provided for?	- Origin and validity of NFRs should be readily assessable - Performance, volume, and stress testing should be planned
What Communications are planned for Beta release (if G4 is done then) or for Beta / Live transition?	- Are non-functional requirements scaled to likely consumer demand? - How are communications products addressing this, and is there any potential mismatch of surge demand?
Is sufficient time / resource allowed for product integration and operational readiness testing (over and above testing carried out as part of development iterations)?	- Testing plan which provides sufficient and appropriate detailed of the nature and rationale for the testing planned - The need for full system and end-to-end process testing should be considered recognised, especially in multi-vendor environments - Test schedules should not assume success at first pass, and allow time for faults identification and rectification
Are end users being adequately prepared for the transition to the new/redesigned digital service?	- The existence of user research and engagement - The existence of a communication strategy that defines who the customers and end users are, and how they will be engaged
Are business users sufficiently empowered to effect change if required?	- Effectiveness of product managers in delivering change in the business
Is there an effective system to track and report deliverable progress and evidence of corrective action when appropriate?	- Backlogs are monitored with evidence of realignment if required - Earned value is properly measured - Timely reports/dashboard to the programme board/steering group
Are there legacy systems, and the plans to transfer data, integrate with them and exit them adequate?	- Review of plans to establish viability of approach
Is the incremental planning approach potentially overloading resource or schedule?	- Monitoring of progress and backlog
Is the budget under control? Is there a risk that a higher spend ‘burn rate’ is required e.g. for developers/coders to maintain pace?	- Examination of financial based management data - Evidence of good, regular financial data, ideally linked to each Sprint cycle - Reports considered at programme board/steering groups
What is the strategy for continuing development of the service (and where applicable growing your portfolio of Digital by Default services)?	- Department and programme policy/strategy - Business case

Are there any Digital by Default Service Standard Assessment recommendations which are yet to be addressed?	- Review recommendations list/report and seek clarification from the programme team
What are the contingency plans & estimates for those requiring non-Online services?	- Evidence that where appropriate, a suitable non digital solution is available
Is there clearly defined empowerment (decisions & budget) for those required?	- Examination of business case or programme structure document may reveal detail of the relative empowerment of individuals and groups (ToR)
Is change managed/controlled effectively	- The existence of a suitably detailed change management strategy and log (when, what, why and who)
What lessons have we captured and considered from past beta or public releases?	- Evidence of the systematic and sound identification, capture, retention, and dissemination/use of lessons learned information
Is there a clear definition as to when beta releases cease and operational support and maintenance becomes the norm?	- Support service handover arrangements are defined and, if external suppliers provide such support, the timing and handover arrangements should be clearly defined in the contracts
Are the business benefits being reviewed and tracked	- Benefits management arrangements reflect the changing agile environment

Live phase – Gate 4 / Gate 5 Review

Areas to Probe	Evidenced by
For any on-going development, is release and deployment resourced and agreed?	- Is there a clear development end date and move into maintenance mode, or plans for a continuous development and improvement phase? - Updated release plans reflecting changes in schedule
Is the programme effectively managing progress towards the target service model?	- Regular inter-dependencies checked and tracked, change is managed, and timely governance reports ensure effective release management fits service model
Are there adequate checkpoints to determine on-going deployment?	- Arrangements to support and ensure continuous development and improvement
Is change management effective?	- Clear process and governance arrangements - Design Authority may be appropriate on more complex programmes - Communications strategy, plan and measures of effectiveness

Are the user and business needs reviewed and benefits being tracked?	- Interviews with key business stakeholders
Does the Business Case fully reflect spend profiles, deliverables and benefits for next period and include achievements and lessons learned from developments to date?	- Review latest programme business case and upkeep arrangements
Are lessons learned being proactively collected and knowledge transfer being facilitated?	- Retrospectives have capture issues and evidence of escalation for correction when appropriate
Are the business benefits being reviewed and tracked	- Benefits management arrangements reflect the changing agile environment
Are the communications keeping key stakeholders effectively up to date with progress and plans?	- Communications strategy remains valid, forward plans in place and evidence of recent communications

Annex B – Glossary

Term	Meaning	Role in Assurance
Blocker	- Something that is preventing a team member, or team, from being able to deliver. - A blocker is different to an impediment. An impediment is something that is causing some delivery issues but is not stopping delivery (there is a workaround). - A blocker is actually stopping something from being delivered and cannot progress.	- The impediment might be a potential impediment or an actual impediment, similar to a risk or an issue. What mechanisms do the team have in place for the identification and resolution of delivery impediments, particularly if outside of their control? How do these get resolved, and how quickly? How do the governance arrangements ensure the timely removal of blockers to enable delivery?
Definition of done	- For a user story to have been completed it must meet the agreed definition of 'done', including the story specific acceptance criteria stated in the user story.	- Do the user stories that have been completed within an iteration meet the definition of done? If not, what mechanisms are in place to rework and ensure that the whole team are familiar with what is required?
Definition of ready	- Before any user story can pass into a production iteration, it must be complete and meet agreed criteria (i.e. clear, complete and includes acceptance criteria).	- Do user stories meet the definition of ready? If not, what mechanisms are in place to rework and ensure that the whole team are familiar with what is required?
Iteration (Sprint)	- A short period of planned activity during which the team will develop the service to meet a planned and agreed set of user needs as stated in a number of user stories. - A term used in one agile method, SCRUM, to describe an iteration. - Another commonly used is 'time-box' (if following Dynamic Systems Development Methodology (DSDM)	- Is the team working in an iterative fashion to continuously develop the service? How do the governance arrangements align to the delivery cadence?
Iteration plan (Sprint plan)	- The iteration plan details the user stories that are to be addressed during that period.	- Good to look at how the iteration plans fit with progression through the overall product backlog and how this tracks back to the roadmap.

Term	Meaning	Role in Assurance
Minimum viable product (MVP)	- One of the aims of agile development is to deliver early, and to get the earliest possible insight and user feedback to help shape and refine the service. To do this we define what is the minimum functionality required to safely launch the service. This we call the minimum viable product (MVP). The service can then be added to, refined and improved over time in light of user feedback. - Project delivery is focussed on developing only those features that are required for a live service. Additional requirements can be added to this stable working model.	- Is there a clear statement of the MVP? Is there a clear understanding of what the MVP is and the relationship to those user needs outside of that MVP?
Prioritised product backlog	- Clearly not every user need in the product backlog has the same priority, therefore the product backlog is prioritised. - The prioritised product backlog is in effect the plan for delivery.	- How is the product backlog prioritised? Does the priority align to the Sprint plans?
Product backlog	- All the user needs, as per user stories, are collected together and create the product backlog. To this extent, the product backlog is similar to a prioritised statement of requirements.	- Are all user stories contained in the product backlog? What is the mechanism for adding user stories to the backlog as more is understood about the full needs?
Release	- It may not be appropriate or possible to continuously put live all parts of the service as they are developed. In such cases, collections of functionality might be put live as a release.	- Can you see a clear relationship between the user need (in user stories from the product backlog) that are being progressed to deliver a release of features or functionality?
Release plan	- Describes the planned content and timescale for releases of live software for the service.	- How does the release plan relate to the road map?
Retrospective	- A meeting at the end of an iteration (Sprint) where the team get a chance to talk about what went well and what went wrong in that iteration, and take some actions to improve matters. It can also cover a larger scope (e.g. a full project retrospective). - Takes the form of gathering data, generating insights and deciding what to do.	- This is a chance for the team to contribute to improving process/productivity. Check that retrospectives are being held, but in particular see that the team is acting on the insights and agreed actions coming from the respective. How have retrospectives helped improve delivery?
Term	**Meaning**	**Role in Assurance**

Road map	- A high level view of the development and implementation of the service (not dissimilar to a programme plan).	- Is there a published roadmap? Does everyone understand and buy into it, and its feasibility? How is the road map being used to communicate, monitor, and assess progress?
Scrum	- A framework for team collaboration on complex projects.	- Test to see if stakeholders in the Scrum are getting the full opportunity to input. Are the outputs in line with scrum objectives?
Show-and-tell	- The primary method of evidencing progress is through 'showing the thing'. The show-and-tell is an opportunity to demonstrate the output from the Sprint. - Should take place at the end of every Sprint.	- Good to see if the show-and-tells are well attended, including those involved in governance. Whilst it is possible to use technology to participate remotely there really is no better way than to physically be there. Is the show-and-tell interactive and open, including any discussion of the challenges faced or when the team have not been able to complete all the agreed user stories in that iteration? If so, what are the reasons and are they being addressed?
Sprint cycles	- A regular repeatable work cycle lasting between 7–30 days (generally 2 weeks)	- Are the resources and management committed to this schedule? - Is reporting linked to this cycle?
Stand up	- Daily review session for the team to share what they have completed, what they have planned, and raise any blockers that need resolution. Best conducted face-to-face if possible, around the team wall and usually taking about 15 minutes	- Observing the 'stand up' will provide really good insight into how the team works and its effectiveness in driving delivery. It will also show whether all those other parts of the organisation which must deliver to the core project team are sufficiently engaged.
Team wall	- Visual management is an important aspect of Agile delivery. The 'team wall' is used as a method for communicating to all what the team has done, is currently doing, and still has to do. It is also the place to record blockers that need to be addressed in order that progress can be made.	- The wall is used as the place for the stand up. Cards and 'post-its' on the wall may be referred to and moved as part of the stand-up. - Teams will use the approach that best meets their needs. The wall is often referred to as a Kanban wall (a term from Japanese lean manufacturing). When assuring an agile delivery, it will be important to see this wall and their interaction with it. Both the content and the process will provide a good indication of the health of the delivery.
Term	**Meaning**	**Role in Assurance**

User need	- The Government's Digital Strategy is predicated on developing digital services that are so good that citizens choose to use them. The agile approach to developing digital services is very focussed on understanding user need and gaining user feedback throughout the development process.	- Look for a clear line of sight from user need to user stories, prioritised in the product backlog, to be addressed in iterations and the functioning software being released into live operation in accordance with the release plan and overall roadmap. - Ask the team how user needs are identified, how they learn from user feedback and how such information is worked back into the work-plan.
User story	- The method for articulating user need is in the form of user stories. A user story is basically a requirement, written in plain English so that it captures who has the user need, what the need is and why they have that need, i.e. the benefits. - User stories are documented in the form: 'in my role as...I need to...in order that…' - In addition the user story also contains the acceptance criteria for that user need.	- Are user stories captured in a consistent manner that meets the agreed definition of done? When looking at user stories, it is expected that those being worked on in an iteration, and those about to be developed in the next few iterations will have more detail than those further down the prioritised backlog. Also, user stories may vary in size and some larger stories may get further broken down into smaller stories.

Annex C – References

GDS guidance:

- Design manual - https://www.gov.uk/service-manual/digital-by-default
- Digital by Default strategy, how agile is applied with government see the GDS website https://www.gov.uk/service-manual/browse
- The Government Digital Strategy can be found at https://www.gov.uk/government/publications/government-digital-strategy
- A short overview of what agile means can be found at: https://www.gov.uk/servicemanual/agile/what-agile-looks-like.html

Cabinet Office Controls:

- https://www.gov.uk/government/publications/cabinet-office-controls
- https://www.gov.uk/government/publications/cabinet-office-controls/cabinet-officecontrols-guidance-version-40
- https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/405381/1_1_FAQs.pdf

HMT guidance:

- https://www.gov.uk/government/publications/the-green-book-appraisal-andevaluation-in-central-governent/agile-systems-projects-a-clarification-of-businesscase-guidance

IPA Toolkit:

- https://www.gov.uk/government/publications/major-projects-authority-assurancetoolkit

National Audit Office report on agile in government

- http://www.nao.org.uk/wp-content/uploads/2012/07/governance_agile_delivery.pdf