

# **DCC Release Management Policy**

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**Version 3.0**



## Table of Contents

<b>1</b>	<b>Purpose .....</b>	<b>3</b>
<b>2</b>	<b>Scope .....</b>	<b>3</b>
	2.1 Environmental Context.....	3
	2.2 Policy Applicability .....	4
<b>3</b>	<b>Policy Validity .....</b>	<b>4</b>
<b>4</b>	<b>Release Management Approach .....</b>	<b>5</b>
	4.1 Production Maintenance Release Planning.....	5
	4.2 Maintenance Release Process .....	5
	4.2.1 Parse & Correlate .....	7
	4.2.2 Communications Hub Firmware.....	7
	4.3 Uplift Process .....	7
	4.4 Release Prioritisation .....	8
	4.5 Release Content and Impact.....	8
	4.6 System Change Freezes .....	10
	4.7 Notification and Communication with SEC Parties .....	10

## 1 Purpose

The purpose of this document is to describe to SEC Parties the DCC Release Management Policy (“the Policy”), in respect of releases which are deployed to the Production environment. The Policy has been developed in accordance with Smart Energy Code (SEC) obligations H8.9 to H8.12.

## 2 Scope

The DCC Release Management Policy describes the processes and governance that DCC applies to releases of DCC Internal Systems and the Parse and Correlate Software.

The purpose of the, separate, SEC Release Management Policy is to set out the implementation of SEC Releases. However, the Policy does contain details of the processes and governance steps applied when SEC Releases are brought up from their development environments into the Production environment.

### 2.1 Environmental Context

This section provides a high-level description of the various environments that releases pass through in order to provide context to the sections that follow. There are four types of integrated environment:

- **PIT – Pre-Integration Test.** These are the environments where Service Providers perform testing of their releases in isolation from the applications and components that are contained in the systems of other Service Providers;
- **SIT – Systems Integration Test.** These are the environments where the applications and components from all Service Providers are brought together in order to perform end-to-end testing;
- **UIT – User Integration Test.** These are the environments that Service Users (Test Participants) have access to so that they can perform their own end-to-end testing; and
- **Production** – the Production environment.

DCC and their Service Providers manage and maintain two sets of environments, divided into two streams:

- **A-stream:** consisting of PIT environments, SIT-A, UIT-A and Production. This is the stream that supports the Live Services and where production maintenance releases are delivered. The whole stream is kept closely aligned to Production in order to allow for the delivery of emergency/expedited releases should they be required; and
- **B-stream:** consisting of PIT environments, SIT-B and UIT-B. This is the stream where major programmes such as SEC Releases are developed and tested.

The number of environment streams is determined by the ability to handle DCC’s delivery portfolio. If the size of this portfolio significantly increases in the future then it is possible that an additional stream, or streams, would be introduced to handle increased throughput demand. Note that the introduction of a new stream would only be performed in full consultation with SEC Parties.

## 2.2 Policy Applicability

For the purposes of this Policy, a release is defined as a collection of changes that has to pass through the integrated environments on the A-stream ahead of deployment into Production (which is classed as being part of the A-stream as specified above).

Any changes that are required to be deployed into Production and which do not have to transit the integrated environments, e.g. a failover activity from primary to secondary servers or an amendment to firewall settings, are handled solely by DCC's Change Management processes.

The Policy covers the following:

- The deployment of production maintenance releases along the A-stream of environments; and
- The uplift of SEC Releases and other major programmes-from their development streams into the A-stream.

There are three types of releases which are defined as follows:

- **Production maintenance releases.** These are the regular deployments of application and system upgrades into Production to maintain Operational effectiveness. Typically, these releases address defects found in the Production and User Test environments, introduce service improvements and deploy application upgrades;
- **SEC Releases.** These are releases governed by the SEC Panel and delivery in accordance with the SEC Release Management Policy. These releases provide additional feature functionality to existing services including SEC Modifications that impact DCC Systems; and
- **Major programmes.** These are releases which have to be developed on the B-stream environments due, mainly, to elongated timescales associated with testing and associated governance regimes. An example is the SMETS1 programme.

## 3 Policy Validity

This version of the DCC Release Management Policy supersedes all previous published versions of the DCC Release Management Policy and becomes effective from the date of publication.

## 4 Release Management Approach

### 4.1 Production Maintenance Release Planning

Production maintenance releases are deployed into Production in most months. DCC's Release Management team create Planned Maintenance windows, up to two years in advance, into which these releases are directed. These windows are published on the Forward Schedule of Change in the Self-Service Interface (SSI). This forward view enables Service Providers to perform their own release planning and allows Service Users to see well in advance when Planned Maintenance will be happening.

The Planned Maintenance slots are spread out through the calendar as evenly as possible. This spacing provides a regular "heartbeat" and maximises throughput as Service Providers become used to sizing the contents of their releases according to the amount of test time available to them, which is very similar for each release. This helps to mitigate the risk of losing defect fixes or even entire releases due to test issues encountered on the path to live.

The SEC Release Management Policy provides for up to two SEC System Releases per year on the dates that are specified in Section 3 of the SEC Release Management Policy. The scheduling of production maintenance releases is amended accordingly to make provision for these releases by adjusting the gaps between Planned Maintenance windows.

The Planned Maintenance windows are further notified to Service Users by email in accordance with SEC obligation H8.4.

DCC keeps the timing of Planned Maintenance windows under regular review as part of its Continuous Improvement Program.

### 4.2 Maintenance Release Process

On a weekly basis, release meetings are held between DCC and its Service Providers to plan their upcoming releases and changes, align them with Planned Maintenance windows and enter them into the production maintenance release schedule which is published to Service Users

The standard release promotion path on the A-stream integrated environments is as follows:  
PIT -> SIT-A -> UIT-A -> Production

On completion of testing in their own PIT environments, Service Providers will present a release to the DCC's Change Review Board (CRB) for promotion to the SIT-A environment. At CRB DCC's Test Assurance function will sign off both the PIT test exit report and the test plans for SIT-A. Testing on SIT-A will include targeted testing of all defect fixes and changes as well as regression testing.

To gain entry into UIT-A a release has to pass through a second CRB governance step which includes DCC Test Assurance sign-off of the SIT-A test exit report.

All releases are placed into UIT-A in order to provide Service Users with the opportunity to participate in testing in line with DCC's obligations in Section H8.8 of the SEC. At least three days ahead of a release being deployed into UIT-A, Test Participants are informed of the planned deployment date into UIT and the contents of the release relevant to their testing – defect fixes, Problem and Incident fixes and Change Requests.

It should be noted that there are components within the DCC Internal Systems which Service Users have no access to and, as such, would not be expected to test. Examples of these include DCC's Service Management Systems and DCC internal reporting.

All release deployments into Production must be approved by DCC's Change Approval Board (CAB), run by the DCC Change Management team.

A typical monthly production maintenance release has a lifecycle of six to seven weeks comprising of around three to four weeks of design, build and PIT testing, around two weeks of SIT-A testing and around one week on UIT-A. However, there are exceptions to the normal cycle which are designed to cater for the rapid deployment of high severity defect fixes.

- A release can pass through all of the environments but in much shortened timescales;
- If the code base on SIT-A is at a higher version than on Production, a release can move directly from PIT to UIT-A and then be deployed into Production. The release would then be retrofitted and tested in the SIT-A environment to ensure all environments are brought into alignment; and
- In exceptional circumstances, if a release is required to be deployed in extremely short timescales (e.g. to fix a high severity Incident), it is possible to move directly from PIT to Production. The SIT-A and UIT-A environments would be brought into alignment retrospectively as soon as possible after the Production deployment.

In all three cases an emergency CAB would be required ahead of Production deployment.

**Note:** There can also be variations to the standard process within different Service Providers and individual components of DCC Internal Systems.

Immediately prior to the deployment of a release into Production, checkpoint calls are held in order to verify network and service stability, resource and communications readiness. Throughout the deployment further checkpoint calls are held in order to ensure that the plan is on track and the deployment is proceeding successfully. Any deviations will be managed through calls with Service Providers to agree remedial actions. Communications to Service Users are issued to signal the start of the deployment, commencement of testing and conclusion of the deployment. Any issues which result in Services being unavailable to Service Users for longer than was communicated to them are handled as high severity issues by the DCC Incident Management team.

### 4.2.1 Parse & Correlate

The release of a new version of the Parse & Correlate software follows the process described above but with the following differences:

- There is an extra TAB (Test Assurance Board) governance step as part of PIT exit;
- The software does not require Planned Maintenance in order to be released as it is not deployed directly into Production. Instead it is made available directly to Service Users via the following methods:
  - for testing in UIT-A, DCC makes the software available to Service Users via SharePoint;
  - for Production use, DCC publishes the new version to their website for Service Users to pick up; and
- No CAB is required because there is no deployment directly into Production.

### 4.2.2 Communications Hub Firmware

A maintenance release of Communications Hub firmware follows the process described in in Section 4.2, the Maintenance Release Process, but with the following differences:

- Testing timescales in PIT, SIT-A and UIT-A are typically significantly longer than those described in Section 4.2;
- Firmware does not require Planned Maintenance in order to be released as it is deployed to the Production estate Over the Air (OTA) by the CSPs once it has been uploaded onto the Central Products List; and
- Following upload onto the Central Products List, a pilot phase will be entered which ensures that firmware is rolled out on a gradual, controlled basis before mass Over the Air (OTA) deployment is performed and/or manufacturing commences. A pilot phase may not be performed under circumstances which require urgent deployment such as a security issue.

## 4.3 Uplift Process

SEC and other major programme releases are developed and tested on the B-stream of environments and follow different testing and governance regimes to those that are applied to production maintenance releases. However, there are interactions with, and dependencies on, the A-stream production maintenance releases as follows:

- Where common code is being developed on both the A-stream and B-stream, regular code merges are performed from the A-stream to the B-stream. These merges take place following successful exit from SIT-A and keep the code in alignment in order to ensure that

the Production system is not regressed when the uplift of the B-stream release into the A-stream occurs;

- In the run up to a B-stream release uplift a code merge freeze may be applied. The timing of this is determined by the start of the final regression test run on the B-stream;
- Every B-stream release uplift must follow the following path to Production:

SIT-B -> SIT-A -> UIT-A -> Production

The uplift to SIT-A is scheduled such that it allows enough time for the release to be regression-tested on both SIT-A and UIT-A before deployment to Production; and

- Uplift of B-stream releases directly into Production is prohibited as this would result in SIT-A and UIT-A going out of alignment with Production, which would disrupt the ability to deploy fixes, e.g. emergency fixes, until alignment is regained.

If further streams, such as a C-stream, are brought online in the future to cater for the development of multiple major programmes in parallel, the uplift processes from these streams will be the same as the B-stream process described here.

**Note;** The introduction of any new development stream(s) would only be done in full consultation with SEC Parties.

## 4.4 Release Prioritisation

Where contention or conflict arises between releases there is a process in place to agree prioritisation. The process involves all DCC internal stakeholders potentially impacted and an escalation route is defined if agreement cannot be reached. The criteria used to determine this prioritisation are as follows, in priority order:

1. The release resolves significant live service operational or security issue;
2. The release removes a blocker to Service User device rollout or SMETS1 migration activity;
3. The release rectifies regulatory misalignment;
4. The release delivers a commitment made to the Authority / BEIS / Service Users;
5. The release closes work-off plan item; and
6. Delivers DCC eco-system operating efficiency.

The criteria are designed to ensure that Users are considered first and foremost.

## 4.5 Release Content and Impact

As stated in Section 2.2 a maintenance release typically addresses defects found in the Production and User Test environments, introduces service improvements or deploys application upgrades. DCC direct the content of all releases, prioritising the resolution of Operational issues for Service Users, typically associated with Problem and Incident records.



Every maintenance release is impact assessed against the following criteria:

- The impact on Services at the time that a release is deployed
- Any functional impact to Service Users introduced by the release – will any changes to Service User systems, processes, configuration values and so on be required in order to work with the release

## 4.6 System Change Freezes

The DCC Change Management team enforce a Christmas change freeze on an annual basis for a period of approximately three weeks. The Date of the Christmas change freeze will vary but DCC publishes these dates to SEC Parties well in advance of the freeze period.

In addition, change freezes will typically be applied around the deployment of SEC and other major programme releases. The duration of these change freezes can vary but DCC publishes these dates to SEC Parties well in advance of the freeze period.

Some changes, for example emergency fixes such as security fixes, may still be applied during change freeze periods but this is done under a regime of heightened assurance and scrutiny.

## 4.7 Notification and Communication with SEC Parties

Information with respect to production maintenance releases is shared with Service Users and other SEC Parties in the following ways:

1. Issuing of Planned Maintenance notices in accordance with the obligations in Section H8.4 of the SEC;
2. Every Planned Maintenance window is published on the Forward Schedule of Change in SSI and SSMI up to two years in advance. The details of every release and change that will be deployed within those windows are published nearer the time as details become available from Service Providers;
3. The production maintenance release schedule is published to Service Users via a secure method such as SharePoint on a weekly basis. This schedule contains low level details of the content of releases including which defect fixes are included; and
4. When Planned Maintenance occurs, and releases are deployed, a series of communications are sent to Service Users by the DCC Service Centre which tells them when the maintenance is about to begin, when testing is being performed and when the maintenance has concluded.