Data Communications Company

SEC Modification Proposal, SECMP0042

DCC Preliminary Impact Assessment (PIA)

Mod Proposal Title: "Amendment to SMKI Services to provide DCC Users and/or SMKI Participants with Authorised Responsible Officer (ARO) Statistics and Information"

Mod Path: Path 3 - Self governance

▪

Version:	**0.6**
Date:	**19 May 2018**
Author:	**DCC**
Classification:	**DCC PUBLIC**

Data Communications Company

Contents

1 Introduction

The purpose of this DCC Preliminary Impact Assessment (PIA) is to provide the relevant Working Group with the information requested in accordance with SEC Section D6.9 and D6.10.

1.1 Previous Information Provided by DCC

This DCC Preliminary Assessment was requested of DCC on 12/01/2018.

1.2 DCC Contact Details

Please raise any queries regarding this DCC Impact Assessment using the contact details provided below.

Name	DCC - SEC Modification queries
Contact email	mods@smartdcc.co.uk

1.3 Modification Description

This modification seeks to introduce a reporting mechanism for DCC Users and/or SMKI Participants to view up to date information on credentials that their ARO''s have been assigned and provided with.

A DCC User and/or a SMKI Participant must be able to obtain up-to-date information to maintain an accurate view of the use of credentials granted to an ARO. Understanding ARO activities on SMKI services is crucial for maintaining oversight of security sensitive activities and for taking steps to maintain appropriate ARO entitlements (e.g. identification of unused, unnecessary dormant accounts).

Currently, there is no 'Business As Usual (BAU)' reporting mechanism that a DCC User and/or SMKI Participant can utilise to understand the activity associated with the credentials issued to their AROs.

1.4 Requirements

The requirements for this modification have been developed by the Working Group during the Refinement phase. The impact on DCC has been assessed against the Business Requirements and the corresponding draft legal text set out in the SECMP0042 Solution Design Document v1.0.

Business Requirement

The DCC will create a reporting mechanism to provide DCC Users and/or SMKI participants with up to date information on credentials that their ARO's have been assigned.

1.1 The report must be issued to all DCC Users and/or SMKI Participants monthly.

1.2 The report must be issued via an appropriate mechanism. The Proposer has no preference as to how the report is issued to DCC Users and/or SMKI Participants.

1.3 The report will include the following information:

- when the ARO's associated credentials were last active
- the type of credential(s) issued to each ARO
- SEC Party Identifier
- Credential Unique Identifier (Infrastructure Key Infrastructure (IKI) Certificate number)
- Token Serial Number (i.e. the serial number of the physical token)
- ARO name
- Last login date on a SMKI Portal (either SMKI Portal via DCC Gateway Connection or SMKI Portal via the Internet)
- Last login date on the SMKI Repository.

1.4 This report will be provided in the format set out in Appendix 1 of this document.

Based on the discussions at the Working Group and the Business Requirements as set out in the Solution Design Document, DCC consider the requirements for SECMP 0042 to be **STABLE**. Where the requirements or SEC obligations set out in the Solution Design Document above change, DCC will be required to carry out further impact assessment.

1.5 High Level DCC Assessment

The Modification Proposal requested a series of reports be available to maintain an accurate view of the use of credentials granted to an ARO. Currently, there is no 'Business As Usual (BAU)' reporting mechanism that a DCC User and/or SMKI Participant can utilise to understand the activity associated with the credentials issued to their AROs.

There will be an impact on the following Service Providers and associated components:

- DSP SMKI Repository
- TSP SMKI Portal
- DCC BI MI Solution
- DCC SharePoint System

This was confirmed in discussions with Service Providers in compiling this Preliminary Impact Assessment.

2 Impact on the DCC Total System, Processes and People

This section describes the impact of SECMP 0042 on the DCC's Services and Interfaces that impact Users and/or Parties.

2.1 Solution Overview

The requirement is to produce a new report that helps the SEC Parties to understand the ARO activities. This report will have to be produced for each SEC party on a monthly basis. The report will include the list of AROs under a SEC party, their associated credentials, the last login date on SMKI Portal and last login date on the TSP SMKI repository.

The data required to produce this report comes from different channels (SMKI Portal and SMKI Repository) as shown in Figure 1 below. Only data related to the SMKI Repository will be provided by DSP SMKI Repository, while ARO activity data is provided by the TSP SMKI Portal. The data will be collated by the DCC BI MI Solution and published on the DCC SharePoint Site. Although the systems are all in place already, new batch files will be defined as required for these interfaces.

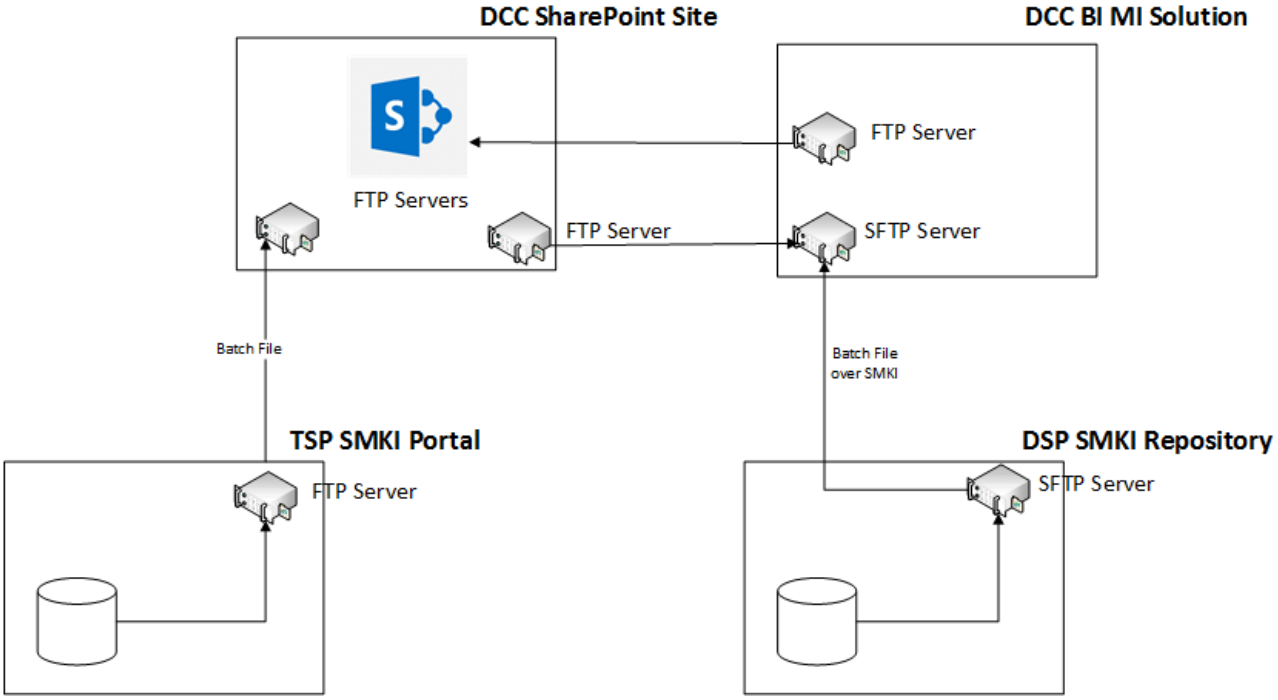

Figure 1: Impacted Systems in the DCC Total System

2.2 Changes to the System Components

2.2.1 DSP SMKI Repository

DSP has no mechanism to establish the relationship between the SEC Parties and AROs using the information available within the SMKI repository. DCC is required to identify the AROs assigned to a SEC party as part of the final report creation.

The ‘SMKI Repository – ARO Activities’ batch file produced by DSP will include:

1. The email address of the ARO
2. The name of the ARO

3. The last login date of the ARO

Calculation of 'last login date' will consider both direct login to the SMKI repository and access via the Web Service interfaces. Only the records of successful login attempts will be considered for producing this report.

The Content Article publishing mechanism within the SMKI repository shall be used to make this report available to the DCC. AROs will not have access to this report as it will contain details of all the Parties. The report shall be scheduled to be published on a day of every month specified by the DCC.

Functionality to produce the ARO activities report and publish it as an attachment to a Content Article shall be added to the SMKI Repository component.

2.2.2 TSP SMKI Portal Data

The data captured within the TSP SMKI Portal, without making any changes to the SMKI code, are the type and serial number of the individual IKI certificates held by an individual ARO. The types are:

- Authorised Organisation Subscriber, used to authenticate to the SMKI Organisation Portal via a DCC Gateway connection
- Authorised Device Subscriber, used to authenticate to the SMKI Device Portal via a DCC Gateway connection
- Authorised Web Service Subscriber, used to authenticate to the SMKI Web Service via a DCC Gateway connection
- Authorised Organisation Subscriber, used to authenticate to the SMKI Organisation Portal via an internet connection
- Authorised Internet Device Subscriber, used to authenticate to the SMKI Device Portal via an internet Connection
- The date and time that the individual IKI credential was used to log into the portal.

The monthly batch file would be a fixed format file that contains the following data:

Column	Data
1	The SEC Party Identifier
2	The name of the ARO in the IKI certificate
3	The type of IKI Certificate (Authorised Organisation Subscriber, Authorised Device Subscriber, Authorised Web Service subscriber, Authorised Internet Organisation Subscriber or Authorised Internet Device Subscriber).
4	The serial number of the IKI certificate
5	The date that the IKI certificate was last used to log-in to SMKI.

Note: it will not be possible to provide historic log-in dates, the last log-in date in the report will therefore be the last log-in date after the change is implemented. If the ARO hasn't used a specific IKI certificate to log-in after the change is implemented, the last log-in date in the report will be empty.

2.2.3 Batch File Transfer

An existing secure FTP solution is in place enabling the transfer of files from the applications. This will be extended to support the new batch file reporting transfers, with additional configuration work to enable the new report to be transferred to the DCC SharePoint site.

The SFTPPlus application will be configured to receive the new batch files and then deliver them to the BI MI application. Once the files are received and processed they will be transferred via the FTP environment onto the BI MI application at different landing locations for each file.

New reports for the SEC Parties generated by the BI MI application will need to be transferred from the DCC BI MI Solution via the SFTPPlus application to the DCC SharePoint site.

The new file transfers will be included in the monthly audit report.

2.2.4 DCC BI MI Solution

Changes to the existing DCC BI MI Solution will be made to accept the incoming data and produce the required reports. The report generation will be scheduled to be run once the required data is received.

The following figure shows the data model for the required reporting.

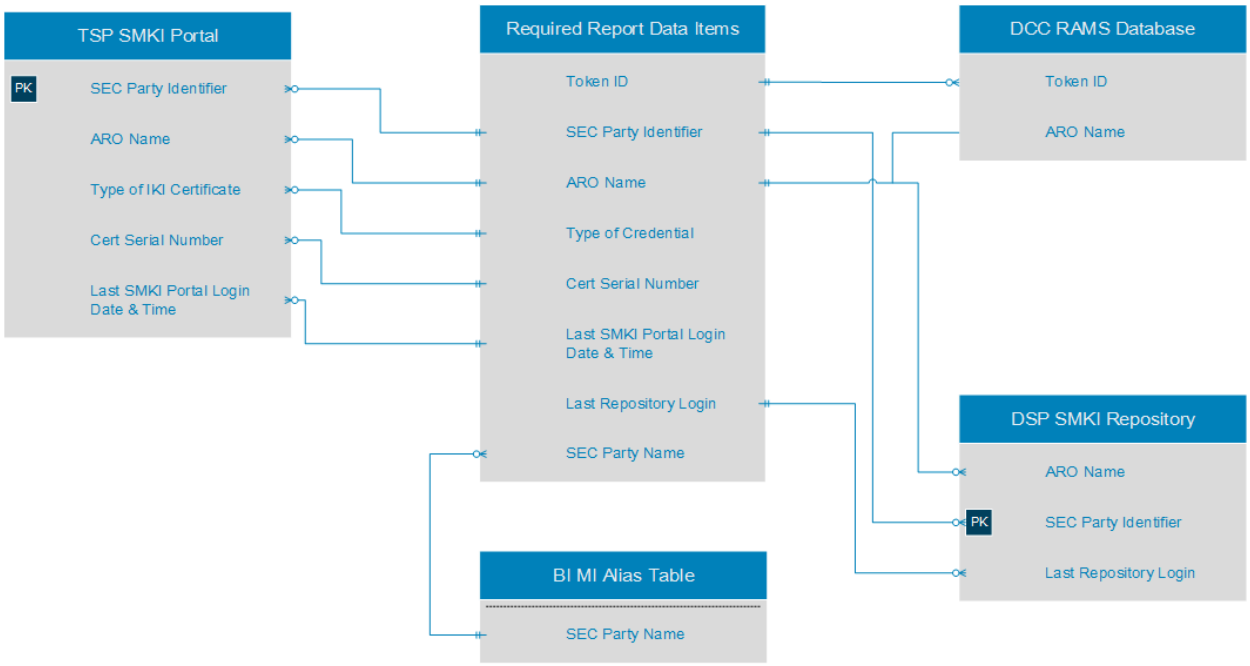

Figure 2; Data Model for Reports

eTokens are issued to AROs by the DCC Registration Authentication (RA) team. This data is manually entered and maintained with other data in a local spreadsheet. There is a significant churn of eTokens associated with SMKI ARO changes. However this information is not available in BI MI, and would require a new interface and FTP job to be associated.

Implementing a new system and interface to monitor and track eTokens would have significant cost and time associated with it. We will seek clarification from the Working Group as to whether this inclusion is acceptable.

2.2.5 General Infrastructure Impact

This change does not introduce any new infrastructure or any changes to any of the Disaster Recovery (DR) or resilience models. It does however introduce additional functionality and as such does imply that infrastructure is carrying out more processing than was assumed under the original contract. This additional processing consumes some of the available headroom assumed at the time of the original design, but this change on its own would not warrant the procurement of additional infrastructure.

2.2.6 Service Management

It is not expected that this change has a material impact on Service and will not change Service Levels. A more detailed review will take place as part of the Full Impact Assessment.

3 Impact on Security

This section describes the impact DCC considers SECMP 0042 will have on security of the DCC Total System.

The change introduces neither new infrastructure nor changes security patterns. Thus, the DCC does not plan to undertake penetration testing as part of this change. Nevertheless, the build activities for the interfaces and connectivity will follow security policy and regression testing activities will be undertaken to validate that the change has not downgraded the existing infrastructure and/or SMKI Service. The change will be in the scope of the annual penetration testing activities across the DCC Total System. Additionally, the content publication mechanisms shall adhere with relevant policy on personal data security.

4 Testing Considerations

This section describes the testing phases required to support the implementation of SECMP 0042.

DCC will be required to carry out Pre-Integration Testing and System Integration Testing for SECMP 0042.

DCC does not anticipates that Users will require User Integration Testing to support their implementation of SECMP 0042.

4.1 Pre-integration Testing

Pre-Integration Testing (PIT) comprises the tests that each Service Provider performs on its respective System changes, prior to the integration of all Service Provider Systems. DCC has factored the cost of Pre-Integration Testing (including DCC assurance) into this Impact Assessment.

Suggested PIT scope would include:

- Production, review and agreement of a design to enable development
- Low level design production, development, unit test and any rework to achieve PIT complete status
- Data generation and loading into the Test environment
- Execution of System Tests through sufficient iterations to enable PIT complete
- Design, implementation and execution of FAT scripts in accordance with assurance procedures used for Release 1.2
- Achieving PIT complete status and subsequent reporting

4.2 Systems Integration Testing

Systems Integration Testing (SIT) is the testing of DCC's Total System, which brings together the component parts of DCC's System (e.g. DSP and CSP Systems) to allow testing of the end-to-end solution by DCC. The SIT activity is done for every DCC System release and incorporates the test and integration of multiple changes, as such the costs of SIT are not included in this assessment.

Additional SIT is recommended by DCC for a modification of this type. It should however be noted that the scope of SIT is likely to be more focused on regression testing to confirm that the changes applied as part of this modification have not had an impact on the wider DCC Total Systems.

Suggested SIT scope would at a high level typically include:

- System Test script and data design;
- Data generation and loading into a co-ordinated System Test environment;
- Execution of System Tests through sufficient iterations to enable SIT complete.

4.3 User Integration Testing

User Integration Testing enables Users to run specific tests to support their implementation of a change. DCC expects that separate User Integration Testing will not be required in order to support User implementation of this modification. Individual changes are collected into a DCC release. In order to achieve more efficient User Integration Testing for all Parties, the DCC will coordinate specific testing requirements for all changes that comprise a release and issue a testing release approach document. As such the costs of UIT are not included in this assessment.

5 Implementation Timescales and Releases

From the date of approval, (in accordance with Section D9 of the SEC), in order to implement the changes proposed DCC requires a lead time of **12 months.**

We would recommend this change be implemented as part of a wider DCC Release.

6 DCC Costs and Charges

6.1 Implementation Costs

The table below details the cost of delivering the changes and Services required to implement this Modification Proposal.

Implementation costs					
Phase	Design, Build, Pre-Integration Testing	System Integration Testing	User Testing	Implementation to Live	Total
SECMP 0042	*Between £115,000 and £155,000*	*Not included*	*Not included*	*Not included*	**£115,000 and £155,000**

Implementation costs – supplementary information	
Implementation cost assumptions	*A. Costs are exclusive of VAT and any applicable finance charges* *B. Majority of the costs above represent labour costs.* *C. Costs provided for Design, Build and Pre-Integration Testing are quotes provided by the Service Providers and assuming there is no scope change can be considered the final costs. DCC have reviewed and challenged the costs from the Service Providers to ensure this reflects best price to date.* *D. Costs will be refined during future assessments.*
Explanation of Implementation Phases	*DCC's implementation costs are provided by implementation phases. The following describes the purpose of each phase:* • ***Design**: The production of detailed System and Service design to deliver all new requirements.* • ***Build**: The development of the designed Systems and Services to create a solution (e.g. code, systems, or products) that can be tested and implemented.* • ***Pre-integration Testing**: Each Service Provider tests its own solution to agreed standards in isolation of other Service Providers. This is assured by DCC.*

- ***System Integration Testing****: All Service Providers' PIT-complete solutions are brought together and tested as an integrated solution, ensuring all Service Provider solutions align and operate as an end to end solution.*
- ***User Integration Testing****: Users are provided with an opportunity to run a range of pre-specified tests in relation to the relevant change.*
- ***Implementation to Live****: The solution is implemented into production environments and ready for use by Users as part of a live service. This service is subject to implementation costs.*

6.2 Full Impact Assessment

The fixed price cost for a Full Impact Assessment is **£14,331**.

6.3 Impact on Charges

This section describes the potential impact on Charges levied by DCC in accordance with the SEC.

DCC notes that SECMP 0042 does not propose any changes to the charging arrangements set out in SEC Section K. DCC has made the assumption that, in the absence of an agreed alternative arrangement by the Working Group, the costs associated with the implementation of SECMP 0042 will be allocated to DCC's fixed cost based and passed through to Parties via Fixed Charges.

Subject to the commercial arrangements put in place to support the relevant Release, DCC expects the increase in Charges associated with the implementation of SECMP 0042 to commence in the month following the modification's implementation.

7 RAID

7.1 Risks

Ref.	Risk Description	Risk Impact
R-001	The format of the batch files to be sent from the TSP SMKI Portal and DSP SMKI Repository DCC is not yet defined, and may require some translation work to work with the BI MI system.	Low
R-002	The retention period and archive policy for these reports may be different from those specified for other reporting functionality, and may require a different solution.	Low

7.2 Assumptions

Ref.	Description	Impact
A-001	This Preliminary Assessment assumes a once monthly report on the relatively limited specified requirements will not have any impact on existing performance across any of the existing systems.	Low
A-002	The number of ARO changes held in the reports will be relatively small, and will not impact the overall performance of the system when reports are generated or transferred.	Low
A-003	There is no need for an adhoc ARO report to be generated above and beyond the scheduled times.	Medium
A-004	No changes to the SMKI code are required to implement this SEC Modification.	High
A-005	No fundamental changes to the established technologies or architectural approaches are required to implement this SEC Modification.	Low

7.3 Issue

Ref.	Description	Impact
I-001	eTokens are issued to AROs by the DCC Registration Authentication (RA) team, but these records are not held in either the SMKI Portal or SMKI Repository. Adding this to the solution will require a new method of storing and retrieving the data in a new repository.	Medium

7.4 Dependencies

Ref.	Description	Impact
D-001	None identified at this stage.	n/a

Appendix 1; Template for Report

The following table shows the report definition required by the SECMP0042 Solution Design Document v1.0.

Categories	Information to be provided by the DCC	
SEC Party Name		
SEC Party Identifier (Signifier)		
List of Authorised Responsible Officer(s) (AROs) for a SEC Party		
When the ARO's credentials were last active	Name(s): • ARO 1 Name: • ARO 2 Name: • ARO N Name:	Last active: (DD/MM/YYYY) • ARO 1 Credentials, Last Active: DD/MM/YYYY • ARO 2 Credentials, Last Active: DD/MM/YYYY ARO N Credentials, Last Active: DD/MM/YYYY
Type of credential(s) issued to ARO(s)	ARO 1 Name:	Credentials issued: • Credential One (IKI Credential Unique number): NUMBER • Token Serial Number: NUMBER • Credential Two (IKI Credential Unique number): NUMBER • Token Serial Number: NUMBER • Etc.
▪	ARO 2 Name:	Credentials issued: • Credential One (IKI Credential Unique number): NUMBER • Token Serial Number: NUMBER • Credential Two (IKI Credential Unique number): NUMBER • Token Serial Number: NUMBER • Etc.
▪	ARO N Name:	Credentials issued: • Credential One (IKI Credential Unique number): NUMBER

		• Token Serial Number: NUMBER • Credential Two (IKI Credential Unique number): NUMBER • Token Serial Number: NUMBER • Etc.
Last login date on a SMKI Portal:	ARO 1 Name:	Last login date on: • SMKI Portal via DCC Gateway Connection: DD/MM/YYYY • SMKI Portal via the Internet: DD/MM/YYYY
	ARO 2 Name:	Last login date on: • SMKI Portal via DCC Gateway Connection: DD/MM/YYYY • SMKI Portal via the Internet: DD/MM/YYYY
	ARO N Name:	Last login date on: • SMKI Portal via DCC Gateway Connection: DD/MM/YYYY • SMKI Portal via the Internet: DD/MM/YYYY