

Security Target

BlackBerry® Wireless Handheld Software Version 4.1.0



Document Version 1.12

BlackBerry Certifications

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Document and Contact Information

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1.11	21 August 2007	Updated trademarks.
1.12	31 August 2007	Updated to resolve observation report 383-4-54-CB-OR-1.v.1.2

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Introduction

Identification

The following information identifies this document:

Title: Security Target: BlackBerry® Wireless Handheld Software Version 4.1.0

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Common Criteria Conformance

The target of evaluation (TOE) is Part 2 extended, Part 3 conformant, and EAL 2 augmented to the Common Criteria for Information Technology Security Evaluation, Version 2.3.

The TOE is not conformant to a protection profile.

Overview

BlackBerry® is the leading wireless solution that allows users to stay connected to a full suite of applications, including email, phone, enterprise applications, Internet, Short Messaging Service (SMS), and organiser information. BlackBerry is a totally integrated package that includes innovative software, advanced BlackBerry devices and wireless network service, providing a seamless solution. The BlackBerry architecture is shown in the following figure.

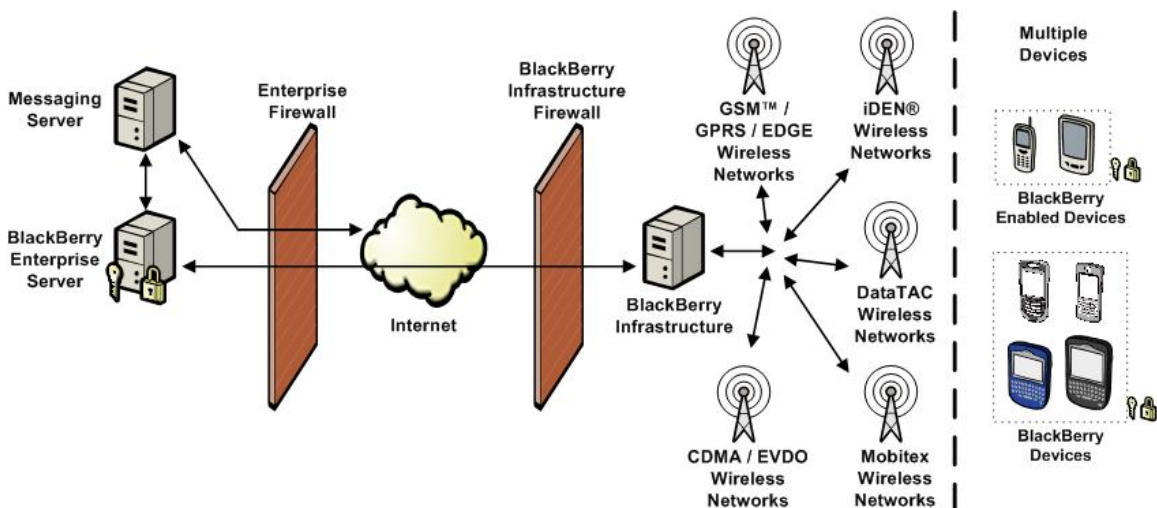


Figure 1. BlackBerry Solution Architecture

BlackBerry Enterprise Server software tightly integrates with Microsoft® Exchange, IBM® Lotus® Domino®, and Novell® GroupWise® while working with other existing enterprise systems to enable push-based access of wireless email and data. It allows users to securely send and receive email and information from enterprise data stores and applications. BlackBerry Enterprise Server provides simplified management and centralised control of the wireless environment with industry-standard performance monitoring capabilities, administrative tools, and wirelessly-enabled IT policies. BlackBerry Enterprise Server also enables several other productivity enhancements, including attachment viewing for popular file formats, wireless calendar synchronisation, and remote address lookup, and allows IT departments to benefit from a scalable and flexible solution that meets their evolving wireless requirements.

BlackBerry devices are built on industry-leading wireless technology, allowing users to receive email and information automatically with no need to request for delivery. Additionally, users are notified when new information arrives, making it easier to stay informed.

BlackBerry devices also provide an intuitive user experience. Users simply click on an email address, telephone number, or URL inside a message to automatically begin composing the new email, make the call, or link to the web page. BlackBerry device users can also easily navigate through icons, menus, and options with the roll-and-click trackwheel and quickly compose messages or enter data using the device keyboard.

BlackBerry provides advanced security features to meet the strict confidentiality and security requirements of the public sector. Data remains encrypted at all points between the device and BlackBerry Enterprise Server using FIPS 140-2 validated cryptography, allowing users to feel confident about wirelessly sending and receiving sensitive information.

BlackBerry operates on multiple high speed wireless networks. With wireless service available in North America, South America, Europe, Asia, Australia, and Africa, the BlackBerry solution can support enterprises around the world while providing options for wireless network and service choice.

Visit <http://www.blackberry.com> for more information on the BlackBerry solution.

TOE Description

TOE Features

Messaging

The BlackBerry solution provides a secure wireless extension of the enterprise messaging environment.

Email

The TOE integrates seamlessly with an existing email account, allowing the user to wirelessly send and receive email. Email is pushed to the TOE automatically, so the user can wirelessly receive email with the same speed and at least as much reliability as that of their desktop email program.

When the user moves or deletes email messages using the TOE, or marks messages read or unread, the changes are reconciled wirelessly between the device and the enterprise email account.

Wireless email messaging and reconciliation is mediated by the BlackBerry Enterprise Server.

PIM Data

The user can synchronise personal information management (PIM) items such as calendar entries, tasks, memos, and contacts wirelessly so that the entries on the TOE and the enterprise email account are consistent. If wireless PIM synchronisation is enabled, PIM items are synchronised over the wireless network automatically. With wireless PIM synchronisation and wireless email reconciliation, the user does not need to physically connect the TOE to their desktop to synchronise and reconcile messaging and PIM data.

The user can create or edit meeting requests and accept or decline invitations using the TOE. Any changes are synchronised wirelessly between the TOE and the enterprise email account.

When wireless PIM synchronisation is enabled, an initial data synchronisation between the TOE and the enterprise mail server to fully synchronise both sides is performed in a way that avoids data loss on either side and is optimised for wireless transmission. After the initial synchronisation is complete, incremental changes are synchronised bi-directionally between the TOE and the enterprise mail server.

PIM data synchronisation is mediated by the BlackBerry Enterprise Server.

Attachments

The BlackBerry Enterprise Server enables the user to use the TOE to view supported email attachments in a format that retains the original layout, appearance, and navigation of the attachment. The device attachment viewer is fully integrated with the device mail application and the BlackBerry Enterprise Server.

Because the BlackBerry Enterprise Server interprets and converts email attachments in binary format, the applications that are associated with the attachment format are not required to be installed on the BlackBerry Enterprise Server, and there is no risk of infection on the device by macro viruses that operate within those applications.

The attachment viewer is installed automatically with the BlackBerry Enterprise Server software and supports many formats, such as .doc, .dot, .xls, .ppt, .pdf, .txt, .html, .htm, .wpd, and .zip document formats and .jpg, .bmp, .gif, .png, and .tif graphic formats.

Remote Address Lookup

Remote address lookup enables the user to search for a recipient in their enterprise directory when they compose an email message using the TOE.

The user can search using letters from the entry's first name, last name, or both. The BlackBerry Enterprise Server searches the enterprise directory and returns (up to) the 20 closest matches. If the desired name does not appear in the list, the user can request the next 20 search results. When the user selects a match, the entry can be added to the personal address book.

BlackBerry Mobile Data Service

The BlackBerry Enterprise Server provides the BlackBerry Browser and third-party Java™ applications with secure access to the Internet and online enterprise data and applications. The BlackBerry Enterprise Server can provide a link to standard servers on the enterprise intranet or Internet using standard Internet protocol, such as HTTP, and encrypts content in transit using the same encryption standard used to encrypt email and other BlackBerry data.

IT Policy

Wireless IT Policy

Wireless IT policy enables the BlackBerry Enterprise Server administrator to define settings and push them wirelessly to the TOE for enforcement. A policy consists of rules that define the security, PIM synchronisation settings, and other behaviours of the TOE. Because the policy is pushed wirelessly, it is effective immediately.

Wireless IT Commands

The BlackBerry Enterprise Server administrator can wirelessly and securely send commands to the TOE for execution. Wireless IT commands include **Kill Handheld** and **Set Password and Lock Handheld**.

Security

BlackBerry Infrastructure

Communication between the TOE and a BlackBerry Enterprise Server or another BlackBerry device is routed by the BlackBerry Infrastructure, the link between the wired and wireless networks in the BlackBerry solution. The communication between the TOE and the BlackBerry Infrastructure utilises the RIM-proprietary Gateway Message Envelope (GME) protocol.

Secure Communication

The BlackBerry solution enables users to send and receive email and access enterprise data wirelessly, while seamlessly protecting data against attack. Data is encrypted while in transit between the TOE and a BlackBerry Enterprise Server or another BlackBerry device and is never decrypted between these two endpoints.

Third Party Application Control

The BlackBerry Enterprise Server administrator can control third-party applications on the TOE in the following ways:

- Allow or disallow third-party applications from being downloaded to the TOE
- Configure policies that define the type of connections that third-party applications can establish (for example, opening network connections inside the enterprise firewall)

Content Protection

The content protection feature encrypts data that is stored on the TOE using AES-256. The TOE also encrypts email messages and meeting requests that it receives when it is locked. If the content protection feature is enabled, the data identified in the following table is protected.

Table 1. User Data Protected by Content Protection Feature

Application	User Data
Email	Subject, email addresses, message body, attachments
Calendar	Subject, location, organiser, attendees, notes included in the appointment or meeting request
Memo Pad	Title, information in the note body
Tasks	Subject, information in the task body
Contacts	All information except for title and category
Auto Text	All entries that the original text is replaced with
BlackBerry Browser	Pushed content, saved web sites, browser cache

TOE Security Functional Policies

The TOE enforces access and flow control security functional policies (SFPs) that control access to TOE functionality and resources.

IT Policy SFP

The IT policy security functional policy (ITPolicy_SFP) controls the application of an IT policy configuration received from a BlackBerry Enterprise Server. The IT policy configuration is only applied if the TOE determines the configuration was sent by an authorised BlackBerry Enterprise Server.

Local Administration SFP

The local administration SFP (LocalAdmin_SFP) controls the ability of the TOE user to manage the TSF through the local administration screens. The TOE user can modify a particular configuration item only if permitted by the IT policy configuration. The TOE user is explicitly denied the ability to modify the IT policy configuration of the TOE.

GME SFP

The GME SFP (GME_SFP) controls the information flow between the TOE and a BlackBerry Enterprise Server, and PIN messaging between the TOE and another BlackBerry device.

IT Command SFP

The IT command SFP (ITCommand_SFP) controls the execution of a wireless IT command received from a BlackBerry Enterprise Server. The IT command is only executed if the TOE determines the command was sent by an authorised BlackBerry Enterprise Server.

PIM SFP

The PIM SFP (PIM_SFP) controls the wireless synchronisation of PIM data between the TOE and the corresponding enterprise email account.

Application Download SFP

The application download SFP (ApplicationDownload_SFP) controls the downloading and installation of third-party applications.

Application Flow SFP

The application flow SFP (ApplicationFlow_SFP) controls the communication initiated by a third-party application with an entity external to the TOE.

Cellular SFP

The cellular SFP (Cellular_SFP) controls the ability to send and receive cellular phone communication.

SMS SFP

The SMS SFP (SMS_SFP) controls the ability to send and receive SMS messages.

Bluetooth SFP

The Bluetooth SFP (Bluetooth_SFP) controls the ability to send and receive Bluetooth communication.

TOE Boundary

Physical Boundary

The TOE can be executed on all Java-based BlackBerry devices with at least 32 MB of memory. All BlackBerry devices share a set of core components, while several components are dependent on the device model. A block diagram of BlackBerry device hardware is shown in the following figure for reference purposes.

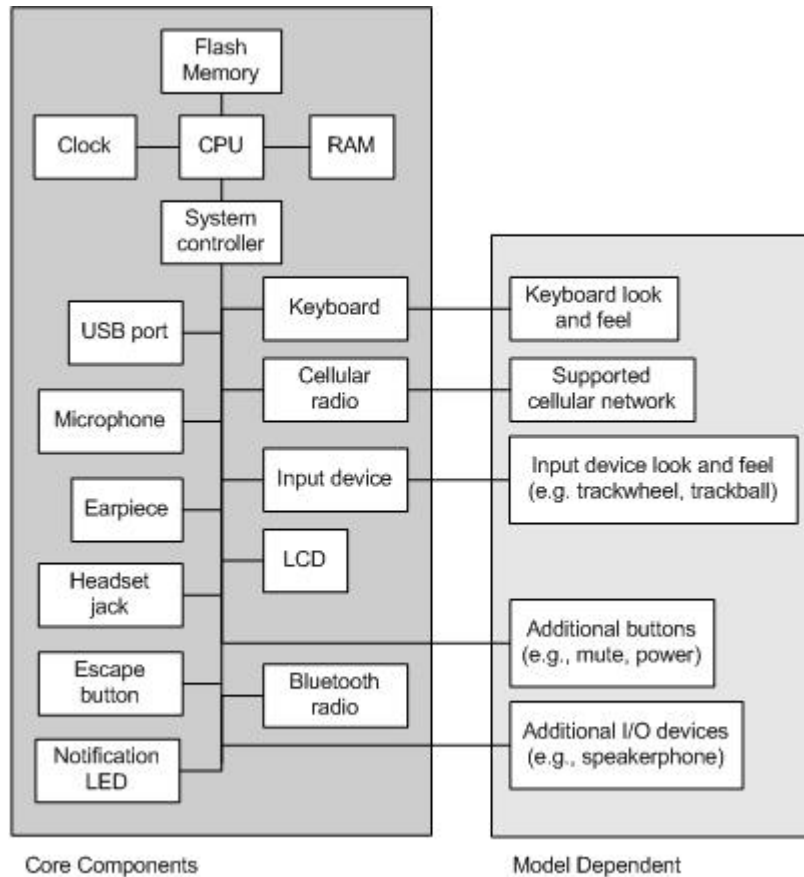


Figure 2. BlackBerry Device Hardware Block Diagram

The TOE includes a rich suite of applications and provides an application programming interface (API) to allow for third-party development of additional applications. The API consists of a Java Platform Micro Edition runtime environment, based on the CLDC 1.1 and MIDP 2.0 specifications, and BlackBerry API extensions that provide additional capabilities and tighter integration with BlackBerry devices. Supporting the API is the BlackBerry Platform, which is comprised of the BlackBerry Java Virtual Machine and the BlackBerry operating system. The TOE is defined as a software TOE that includes the BlackBerry Platform and the API that it supports but excludes the BlackBerry device hardware. The physical boundary of the TOE is shown in the following figure.

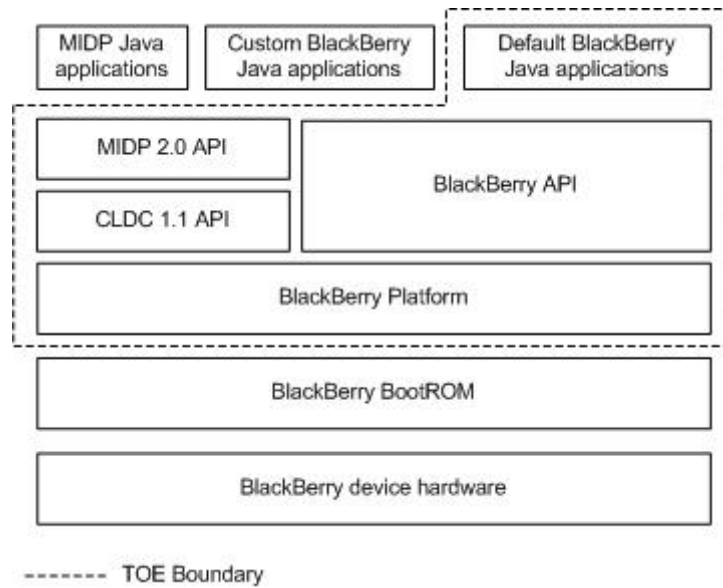


Figure 3. TOE Physical Boundary

Logical Boundary

The functionality examined in this evaluation is limited to the following core features of the TOE:

- Secure communication with the BlackBerry Enterprise Server
- Secure communication with other BlackBerry devices
- Remote management of the TOE
- Content protection
- Third-party application control
- Wireless communication
- Wireless PIM data synchronisation

Evaluated Configuration

As of the date of this document, the following BlackBerry devices can execute the TOE:

- BlackBerry 8700 Series of wireless handhelds
- BlackBerry 7130e
- BlackBerry 7100 Series
- BlackBerry 7290 Wireless Handheld
- BlackBerry 7250 Wireless Handheld
- BlackBerry 7520 Wireless Handheld

Visit <http://www.blackberry.com> for up to date device availability information.

The evaluated configurations consist of the following:

- a. BlackBerry Wireless Handheld Software version 4.1.0 (4.1.0.351, Platform 2.0.0.143) executing on the BlackBerry 8700r
- b. BlackBerry Wireless Handheld Software version 4.1.0 (4.1.0.194, Platform 2.0.0.90) executing on the BlackBerry 8700c
- c. BlackBerry Wireless Handheld Software version 4.1.0 (4.1.0.355, Platform 3.1.0.17) executing on the BlackBerry 8707g
- d. BlackBerry Wireless Handheld Software version 4.1.0 (4.1.0.207, Platform 2.2.0.86) executing on the BlackBerry 7130e

Software version numbers are displayed on a BlackBerry device by navigating to the Options list and selecting the About item.

TOE Security Environment

Assumptions

The following assumptions are made about the environment in which the TOE operates:

- | | |
|--------------|---|
| A.Network | The wireless network required by the TOE is available, and the TOE has permission to use the network. |
| A.ProperUser | The TOE user is not malicious, attempts to interact with the TOE in compliance with the enterprise security policy, and exercises precautions to reduce the risk of loss or theft of the TOE. |

Threats

The following threats are addressed by the TOE:

- | | |
|------------------|---|
| T.DataDisclosure | Unauthorised entities may monitor and gain access to user data exchanged between the TOE and the BlackBerry Enterprise Server or another BlackBerry device. |
| T.LossOrTheft | The TOE may be lost or stolen, and an unauthorised individual may attempt to access user data or TOE security functions. |
| T.ViolatePolicy | The TOE user may inadvertently attempt to manage or use the TOE security functions in violation of the enterprise security policy. |

The following threats are addressed by the environment in which the TOE operates:

- | | |
|----------|---|
| T.Modify | The TSF-enforcing mechanisms may be modified by an unauthorised individual. |
|----------|---|

Organisational Security Policies

The TOE must comply with the following organisational security policies:

- | | |
|-------------|--|
| P.Provision | The TOE must be provisioned for a specific individual in the enterprise messaging environment by the BlackBerry Enterprise Server administrator prior to use by the individual. |
| P.Policy | The configuration of the TOE security functions must adhere to the enterprise security policy. |
| P.Notify | The TOE user must immediately notify the BlackBerry Enterprise Server administrator if the TOE is lost or stolen. |
| P.Wireless | The TOE must support wireless PIM data synchronisation and at least the following methods of wireless communication: wireless email and SMS messaging, cellular phone communication, and wireless access to the enterprise network and the Internet. |

Security Objectives

TOE Security Objectives

The following are the TOE security objectives:

- | | |
|-----------------|---|
| O.DataExchange | The TOE must ensure that all user data exchanged between it and the BlackBerry Enterprise Server or another BlackBerry device is protected from unauthorised disclosure |
| O.DataStorage | The TOE must provide the capability to protect stored user data from unauthorised disclosure. |
| O.Admin | The TOE must provide the capability for the TOE user to manage its security functions and execute administrative commands. |
| O.RemoteAdmin | The TOE must provide the capability for the BlackBerry Enterprise Server administrator to remotely manage the TOE security functions and execute administrative commands. |
| O.FlexibleAdmin | The remote management capability of the TOE must allow for a high degree of flexibility in managing the TOE security functions. |
| O.NoOverride | The TOE must prevent the TOE user from overriding the management of security functions performed remotely by the BlackBerry Enterprise Server administrator. |
| O.Wireless | The TOE must provide the capability to wirelessly synchronise PIM data; send and receive email, PIN, and SMS messages; send and receive cellular phone communication; access the enterprise network and the Internet; and communicate with Bluetooth devices. |

Environmental Security Objectives

The following security objectives must be met by the environment in which the TOE operates:

- | | |
|--------------|--|
| O.Network | The TOE must be able to communicate with the BlackBerry Infrastructure. |
| O.ProperUser | The TOE user must be trusted to interact with the TOE in a manner that maintains its security, complies with the enterprise security policy, and reduces the risk of loss or theft of the TOE. |
| O.Notify | The TOE user must immediately notify the BlackBerry Enterprise Server administrator if the TOE is lost or stolen. |
| O.Provision | The BlackBerry Enterprise Server administrator must provision the TOE for the intended TOE user prior to its use. |
| O.Integrity | The integrity of the TOE must be verified. |
| O.AdminID | The BlackBerry Enterprise Server must identify authorised users and associate them to an administrative role before permitting them access to BlackBerry Enterprise Server functions or data. |

IT Security Requirements

This section identifies the security functional and assurance requirements that are applicable to the TOE and the functional requirements that are applicable to the IT environment of the TOE.

Conventions

Component Operations

The following typographic conventions are used to identify the permissible operations, as identified in section 6.4.1.3.2 of Part 1, on functional and assurance components:

- Iteration – The iteration operation is identified by enumerating the component. For example, performing the iteration operation on the functional component FMT_MOF.1.1 would result in the component enumeration FMT_MOF.1 (1) and FMT_MOF.1 (2). Functional elements are also enumerated for clarity, for example, FMT_MOF.1.1 (1) and FMT_MOF.1.1 (2).
- Assignment – The assignment operation is identified with regular text contained in brackets. For example, an assignment operation can be performed on FMT_SMR.1.1 as follows: “The TSF shall maintain the roles [root, guest, and user].”
- Selection – The selection operation is identified with italicised text contained in brackets. For example, a selection operation can be performed on FPT_ITT.1.1 as follows: “The TSF shall protect TSF data from [*disclosure*] when it is transmitted between separate parts of the TOE.”
- Refinement – The refinement operation is identified with underscored text. For example, a refinement operation can be performed on FTA_TAB.1.1 as follows: “Before establishing a user session, the TSF shall display an advisory warning message that requires acknowledgement by the user regarding unauthorised use of the TOE.”

Explicitly Defined Requirements

Explicitly defined functional and assurance requirements are named according to the normal Common Criteria convention with “_EXP” appended. For example, FCS_VAL_EXP.1 is an explicitly defined functional requirement for the FCS, Cryptographic support, functional class.

Requirements for the IT Environment

Requirements for the IT environment are identified by appending “(ENV)” at the component and element levels. For example, FPT_AMT.1 (ENV) identifies that the requirements associated with FPT_AMT.1 are placed on the IT environment.

TOE Security Functional Requirements

The following functional requirements, listed according to their functional class, are applicable to the TOE.

Class FCS, Cryptographic Support

FCS_VAL_EXP.1, Cryptographic module validation

FCS_VAL_EXP.1.1 The following cryptographic modules of the TSF shall meet the requirements of FIPS 140-2, *Security Requirements for Cryptographic Modules*: [

- BlackBerry Cryptographic Kernel version 3.8.3.7

].

Dependencies: FCS_CKM.4, FCS_COP.1

FCS_CKM.1, Cryptographic key generation (1)

FCS_CKM.1.1 (1) The TSF shall generate cryptographic keys in accordance with a specified cryptographic key generation algorithm [FIPS 186-2 Appendix 3.1 PRNG] and specified cryptographic key sizes [256 bits, 112 bits] that meet the following: [FIPS 186-2 Appendix 3.1].

Dependencies: [FCS_CKM.2 or FCS_COP.1], FCS_CKM.4, FMT_MSA.2

FCS_CKM.1, Cryptographic key generation (2)

FCS_CKM.1.1 (2) The TSF shall generate cryptographic keys in accordance with a specified key generation algorithm [ECDH and ECMQV] and specified cryptographic key sizes [256 bits] that meet the following: [IEEE P1363 Draft 13].

Dependencies: [FCS_CKM.2 or FCS_COP.1], FCS_CKM.4, FMT_MSA.2

FCS_CKM.4, Cryptographic key destruction

FCS_CKM.4.1 The TSF shall destroy cryptographic keys in accordance with a specified cryptographic key destruction method [zeroization] that meets the following: [FIPS 140-2 zeroization requirements].

Dependencies: [FDP_ITC.1 or FDP_ITC.2 or FCS_CKM.1], FMT_MSA.2

FCS_COP.1, Cryptographic operation

FCS_COP.1.1 The TSF shall perform [data encryption and decryption, random number generation, digital signature verification, and key agreement] in accordance with a specified cryptographic algorithm [

- data encryption and decryption: AES, Triple DES
- random number generation: FIPS 186-2 Appendix 3.1 PRNG
- digital signature verification: ECDSA
- key agreement: ECDH, ECMQV

] and cryptographic key sizes [

- data encryption and decryption: 256 bits (AES), 112 bits (2-key Triple DES)
- random number generation: not applicable
- digital signature verification: 571 bits
- key agreement: 521 bits¹

] that meet the following: [

¹ The key agreement process results in a 256-bit key for use with AES.

- data encryption and decryption: FIPS 197 (AES), FIPS 46-3 (Triple DES), NIST SP 800-38A (CBC mode of operation)
- random number generation: FIPS 186-2
- digital signature verification: FIPS 186-2, ANSI X9.62-1998
- key agreement: IEEE P1363 Draft 13

].

Dependencies: [FDP_ITC.1 or FDP_ITC.2 or FCS_CKM.1], FCS_CKM.4, FMT_MSA.2

Class FDP, User Data Protection

FDP_ACC.1, Subset access control (1)

FDP_ACC.1.1 (1) The TSF shall enforce the [ITPolicy_SFP] on [the application of an IT policy configuration received from a BlackBerry Enterprise Server (per ITCommand_SFP)].

Dependencies: FDP_ACF.1

FDP_ACF.1, Security attribute based access control (1)

FDP_ACF.1.1 (1) The TSF shall enforce the [ITPolicy_SFP] to objects based on the following: [attributes for the listed subjects and objects:

- IT command (subject):
 - UID of source BlackBerry Enterprise Server
 - IT command type²
 - IT command data³
- Current IT policy configuration (object):
 - UID of source BlackBerry Enterprise Server
 - ECDSA public key

].

FDP_ACF.1.2 (1) The TSF shall enforce the following rules to determine if an operation among controlled subjects and controlled objects is allowed: [

- If there is no current IT policy configuration (i.e. the TOE has not yet been provisioned) then the new IT policy configuration is applied.
- If there is a current IT policy configuration then the new IT policy configuration is applied if the following conditions are satisfied:
 - The UID of the source BlackBerry Enterprise Server for the new and current IT policy configuration match.
 - The ECDSA signature verifies successfully using the ECDSA public key included with the current IT policy configuration.

² Per ITCommand_SFP, the IT command type is known to be **Set IT Policy**.

³ Per ITCommand_SFP, the IT command data is known to contain the new IT policy configuration, an ECDSA public key, and an ECDSA signature of the new IT policy configuration and the included ECDSA public key.

].

FDP_ACF.1.3 (1) The TSF shall explicitly authorise access of subjects to objects based on the following additional rules: [none].

FDP_ACF.1.4 (1) The TSF shall explicitly deny access of subjects to objects based on the following additional rules: [none].

Dependencies: FDP_ACC.1, FMT_MSA.3

FDP_ACC.1, Subset access control (2)

FDP_ACC.1.1 (2) The TSF shall enforce the [LocalAdmin_SFP] on [the ability of the TOE user to manage the TSF through the local administration screens].

Dependencies: FDP_ACF.1

FDP_ACF.1, Security attribute based access control (2)

FDP_ACF.1.1 (2) The TSF shall enforce the [LocalAdmin_SFP] to objects based on the following: [attributes for the listed subjects and objects:

- TOE user (subject)
- Current IT policy configuration (object)

].

FDP_ACF.1.2 (2) The TSF shall enforce the following rules to determine if an operation among controlled subjects and controlled objects is allowed: [

- If the **Password Required** IT policy rule is set to TRUE then the TOE user cannot disable the functionality specified in FIA_UAU.1 and FIA_UID.1.
- If the **User Can Change Timeout** IT policy rule is set to TRUE then the device user can modify the time interval specified in FTA_SSL.1
- If the **User Can Change Timeout** IT policy rule is set to FALSE then the device user cannot modify the time interval specified in FTA_SSL.1
- If the **Disable Bluetooth** IT policy rule is set to FALSE then the device user can enable and disable the flow of Bluetooth communication.
- If the **Disable Bluetooth** IT policy rule is set to TRUE then the device user cannot enable the flow of Bluetooth communication.
- If the **Content Protection Strength** IT policy rule is NULL then the device user can enable and disable the functionality specified in FDP_SDP_EXP.1.
- If the **Content Protection Strength** IT policy rule is not NULL then the device user cannot disable the functionality specified in FDP_SDP_EXP.1.
- If the **Force Lock When Holstered** IT policy rule is set to FALSE then the device user can enable and disable session locking for the device-in-holster event specified in FTA_SSL_EXP.4.
- If the **Force Lock When Holstered** IT policy rule is set to TRUE then the device user cannot disable session locking for the device-in-holster event specified in FTA_SSL_EXP.4.

].

FDP_ACF.1.3 (2) The TSF shall explicitly authorise access of subjects to objects based on the following additional rules: [none].

FDP_ACF.1.4 (2) The TSF shall explicitly deny access of subjects to objects based on the following additional rules: [

- The TOE user cannot modify the current IT policy configuration.

].

Dependencies: FDP_ACC.1, FMT_MSA.3

FDP_ETC.2, Export of user data with security attributes

FDP_ETC.2.1 The TSF shall enforce the [GME_SFP] when exporting user data, controlled under the SFP(s), outside the TSC to the BlackBerry Infrastructure.

FDP_ETC.2.2 The TSF shall export the user data with the user data's associated security attributes.

FDP_ETC.2.3 The TSF shall ensure that the security attributes, when exported outside the TSC, are unambiguously associated with the exported user data.

FDP_ETC.2.4 The TSF shall enforce the following additional rules when user data is exported from the TSC to the BlackBerry Infrastructure: [none].

Dependencies: [FDP_ACC.1 or FDP_IFC.1]

FDP_IFC.1, Subset information flow control (1)

FDP_IFC.1.1 (1) The TSF shall enforce the [GME_SFP] on [all communication to and from the TOE that is routed through the BlackBerry Infrastructure (i.e. all communication between the TOE and a BlackBerry Enterprise Server, and PIN messaging between the TOE and another BlackBerry device)].

Dependencies: FDP_IFF.1

FDP_IFF.1, Simple security attributes (1)

FDP_IFF.1.1 (1) The TSF shall enforce the [GME_SFP] based on the following types of subject and information security attributes: [for the listed subjects and information:

- Device (subject):
 - PIN
 - GME service book
 - Current IT policy configuration
- Communication (information):
 - UID of BlackBerry Enterprise Server
 - PIN of remote BlackBerry device

].

FDP_IFF.1.2 (1) The TSF shall permit an information flow between a controlled subject and controlled information via a controlled operation if the following rules hold: [

- For communication with a BlackBerry Enterprise Server:
 - The PIN of the TOE and the UID of the BlackBerry Enterprise Server must be included in the information sent to the BlackBerry Infrastructure for routing to the BlackBerry Enterprise Server.
- For PIN messaging:
 - Receiving PIN messages is always permitted.
 - If the **Allow Peer-to-Peer Messages** IT policy rule is set to TRUE then sending PIN messages is permitted.
 - The PIN of the TOE and the PIN of the remote device must be included in the information sent to the BlackBerry Infrastructure for routing to the remote device.

].

FDP_IFF.1.3 (1) The TSF shall enforce the following additional rules: [none].

FDP_IFF.1.4 (1) The TSF shall provide the following additional capabilities: [

- For communication with a BlackBerry Enterprise Server:
 - When sending information to a BlackBerry Enterprise Server, the TOE generates a session key and uses it to encrypt the information. The session key is encrypted with the master encryption key and the encrypted information and encrypted session key are sent to the BlackBerry Infrastructure for routing to the BlackBerry Enterprise Server.
 - When receiving information from a BlackBerry Enterprise Server via the BlackBerry Infrastructure, the TOE uses the master encryption key to decrypt the encrypted session key and then uses the session key to decrypt the information.
 - Encryption and decryption is performed using the AES algorithm.
- For PIN messaging:
 - When sending a PIN message to another BlackBerry device, the TOE generates a session key and uses it to encrypt the information. The session key is encrypted with the peer-to-peer encryption key and the encrypted information and encrypted session key are sent to the BlackBerry Infrastructure for routing to the remote device.
 - When receiving a PIN message from another BlackBerry device via the BlackBerry Infrastructure, the TOE uses the peer-to-peer encryption key to decrypt the encrypted session key and then uses the session key to decrypt the information.
 - Encryption and decryption is performed using the Triple DES algorithm.

].

FDP_IFF.1.5 (1) The TSF shall explicitly authorise an information flow based on the following rules: [none].

FDP_IFF.1.6 (1) The TSF shall explicitly deny an information flow based on the following rules: [

- For PIN messaging:
 - If the **Allow Peer-to-Peer Messages** IT policy rule is set to FALSE then sending PIN messages is not permitted.

].

Dependencies: FDP_IFC.1, FMT_MSA.3

FDP_IFC.1, Subset information flow control (2)

FDP_IFC.1.1 (2) The TSF shall enforce the [ITCommand_SFP] on [the execution of a wireless IT command received from a BlackBerry Enterprise Server (via the BlackBerry Infrastructure per GME_SFP)].

Dependencies: FDP_IFF.1

FDP_IFF.1, Simple security attributes (2)

FDP_IFF.1.1 (2) The TSF shall enforce the [ITCommand_SFP] based on the following types of subject and information security attributes: [for the listed subjects and information:

- IT command (subject):
 - UID of source BlackBerry Enterprise Server
 - Timestamp
 - IT command type
 - IT command data
- Timestamp of previously executed IT command (information)
- Current IT policy configuration (information):
 - UID of source BlackBerry Enterprise Server

].

FDP_IFF.1.2 (2) The TSF shall permit an information flow between a controlled subject and controlled information via a controlled operation if the following rules hold: [

- The timestamp of the IT command must be more recent than the timestamp of the previously executed IT command.
- If the IT command type is **Set IT Policy** then the IT command is executed with the supplied IT command data⁴ per ITPolicy_SFP.
- If the UID included in the IT command matches the UID in the current IT policy configuration then the IT command is executed, per the following command type:
 - **Kill Handheld** – Performs a security wipe of the device per FDP_SDP_EXP.2.
 - **Set Password and Lock** – Sets the device password to the password specified in the IT command data and locks the device per FTA_SSL_EXP.4.

].

FDP_IFF.1.3 (2) The TSF shall enforce the following additional rules: [none].

FDP_IFF.1.4 (2) The TSF shall provide the following additional capabilities: [

- If an IT command is executed then the timestamp of the previously executed IT command is replaced with the timestamp of the current IT command.

⁴ For the **Set IT Policy** command type, the IT command data contains a new IT policy configuration, an ECDSA public key, and an ECDSA signature of the new IT policy configuration and ECDSA public key.

].

FDP_IFF.1.5 (2) The TSF shall explicitly authorise an information flow based on the following rules: [none].

FDP_IFF.1.6 (2) The TSF shall explicitly deny an information flow based on the following rules: [

- If the timestamp of the IT command is older than the timestamp of the previously executed IT command then the IT command is not executed.
- If there is no existing IT policy configuration (i.e. the TOE has not yet been provisioned) and the IT command type is not **Set IT Policy** then the IT command is not executed.

].

Dependencies: FDP_IFC.1, FMT_MSA.3

FDP_IFC.1, Subset information flow control (3)

FDP_IFC.1.1 (3) The TSF shall enforce the [PIM_SFP] on [the wireless synchronisation of PIM data between the TOE and the corresponding enterprise email account (via a BlackBerry Enterprise Server)].

Dependencies: FDP_IFF.1

FDP_IFF.1, Simple security attributes (3)

FDP_IFF.1.1 (3) The TSF shall enforce the [PIM_SFP] based on the following types of subject and information security attributes: [for the listed subjects and information:

- Device (subject):
 - Current IT policy configuration
- PIM data (information)

].

FDP_IFF.1.2 (3) The TSF shall permit an information flow between a controlled subject and controlled information via a controlled operation if the following rules hold: [

- If the **Disable All Wireless Sync** IT policy rule is set to FALSE then the wireless synchronisation of PIM data is permitted.

].

FDP_IFF.1.3 (3) The TSF shall enforce the following additional rules: [none].

FDP_IFF.1.4 (3) The TSF shall provide the following additional capabilities: [none].

FDP_IFF.1.5 (3) The TSF shall explicitly authorise an information flow based on the following rules: [none].

FDP_IFF.1.6 (3) The TSF shall explicitly deny an information flow based on the following rules: [

- If the **Disable All Wireless Sync** IT policy rule is set to TRUE then the wireless synchronisation of PIM data is not permitted.

].

Dependencies: FDP_IFC.1, FMT_MSA.3

FDP_IFC.1, Subset information flow control (4)

FDP_IFC.1.1 (4) The TSF shall enforce the [ApplicationDownload_SFP] on [downloading and installing third-party applications].

Dependencies: FDP_IFF.1

FDP_IFF.1, Simple security attributes (4)

FDP_IFF.1.1 (4) The TSF shall enforce the [ApplicationDownload_SFP] based on the following types of subject and information security attributes: [for the listed subjects and information:

- Device (subject):
 - Current IT policy configuration
- Third-party application (information)

].

FDP_IFF.1.2 (4) The TSF shall permit an information flow between a controlled subject and controlled information via a controlled operation if the following rules hold: [

- If the **Disallow Third Party Application Downloads** IT policy rule is set to FALSE then third-party applications may be downloaded and installed.

].

FDP_IFF.1.3 (4) The TSF shall enforce the following additional rules: [none].

FDP_IFF.1.4 (4) The TSF shall provide the following additional capabilities: [none].

FDP_IFF.1.5 (4) The TSF shall explicitly authorise an information flow based on the following rules: [none].

FDP_IFF.1.6 (4) The TSF shall explicitly deny an information flow based on the following rules: [

- If the **Disallow Third Party Application Downloads** IT policy rule is set to TRUE then third-party applications may not be downloaded and installed.

].

Dependencies: FDP_IFC.1, FMT_MSA.3

FDP_IFC.1, Subset information flow control (5)

FDP_IFC.1.1 (5) The TSF shall enforce the [ApplicationFlow_SFP] on [communication initiated by a third-party application with an entity external to the TOE].

Dependencies: FDP_IFF.1

FDP_IFF.1, Simple security attributes (5)

FDP_IFF.1.1 (5) The TSF shall enforce the [ApplicationFlow_SFP] based on the following types of subject and information security attributes: [for the listed subjects and information:

- Third-party application (subject):
 - Current IT policy configuration
- Communication (information):
 - Location of external entity

].

FDP_IFF.1.2 (5) The TSF shall permit an information flow between a controlled subject and controlled information via a controlled operation if the following rules hold: [

- If the **Allow External Connections** IT policy rule is set to TRUE then third-party applications are permitted to initiate connections to entities on the external network (e.g. to a public gateway).
- If the **Allow Internal Connections** IT policy rule is set to TRUE then third-party applications are permitted to initiate connections to entities on the internal network (e.g. to the Mobile Data Service of a BlackBerry Enterprise Server).
- If the **Allow Third Party Apps to Use Serial Port** IT policy rule is set to TRUE then third-party applications are permitted to initiate connections to entities through the USB port of the device.

].

FDP_IFF.1.3 (5) The TSF shall enforce the following additional rules: [none].

FDP_IFF.1.4 (5) The TSF shall provide the following additional capabilities: [none].

FDP_IFF.1.5 (5) The TSF shall explicitly authorise an information flow based on the following rules: [none].

FDP_IFF.1.6 (5) The TSF shall explicitly deny an information flow based on the following rules: [

- If the **Allow External Connections** IT policy rule is set to FALSE then third-party applications are not permitted to initiate connections to entities on the external network.
- If the **Allow Internal Connections** IT policy rule is set to FALSE then third-party applications are not permitted to initiate connections to entities on the internal network.
- If the **Allow Third Party Apps to Use Serial Port** IT policy rule is set to FALSE then third-party applications are not permitted to initiate connections to entities through the USB port of the device.

].

Dependencies: FDP_IFC.1, FMT_MSA.3

FDP_IFC.1, Subset information flow control (6)

FDP_IFC.1.1 (6) The TSF shall enforce the [Cellular_SFP] on [cellular phone communication].

Dependencies: FDP_IFF.1

FDP_IFF.1, Simple security attributes (6)

FDP_IFF.1.1 (6) The TSF shall enforce the [Cellular_SFP] based on the following types of subject and information security attributes: [for the listed subjects and information:

- Device (subject):
 - Current IT policy configuration
- Cellular phone communication (information)

].

FDP_IFF.1.2 (6) The TSF shall permit an information flow between a controlled subject and controlled information via a controlled operation if the following rules hold: [

- If the **Allow Phone** IT policy rule is set to TRUE then cellular phone communication is permitted.

].

FDP_IFF.1.3 (6) The TSF shall enforce the following additional rules: [none].

FDP_IFF.1.4 (6) The TSF shall provide the following additional capabilities: [none].

FDP_IFF.1.5 (6) The TSF shall explicitly authorise an information flow based on the following rules: [

- Cellular phone communication to emergency numbers (e.g. 911) is always permitted.

].

FDP_IFF.1.6 (6) The TSF shall explicitly deny an information flow based on the following rules: [

- If the **Allow Phone** IT policy rule is set to FALSE then cellular phone communication is not permitted.

].

Dependencies: FDP_IFC.1, FMT_MSA.3

FDP_IFC.1, Subset information flow control (7)

FDP_IFC.1.1 (7) The TSF shall enforce the [SMS_SFP] on [SMS messaging].

Dependencies: FDP_IFF.1

FDP_IFF.1, Simple security attributes (7)

FDP_IFF.1.1 (7) The TSF shall enforce the [SMS_SFP] based on the following types of subject and information security attributes: [for the listed subjects and information:

- Device (subject):
 - Current IT policy configuration
- SMS messages (information)

].

FDP_IFF.1.2 (7) The TSF shall permit an information flow between a controlled subject and controlled information via a controlled operation if the following rules hold: [

- If the **Allow SMS** IT policy rule is set to TRUE then SMS messaging is permitted.

].

FDP_IFF.1.3 (7) The TSF shall enforce the following additional rules: [none].

- FDP_IFF.1.4 (7) The TSF shall provide the following additional capabilities: [none].
- FDP_IFF.1.5 (7) The TSF shall explicitly authorise an information flow based on the following rules: [none].
- FDP_IFF.1.6 (7) The TSF shall explicitly deny an information flow based on the following rules: [
 - If the **Allow SMS** IT policy rule is set to FALSE then SMS messaging is not permitted.].

Dependencies: FDP_IFC.1, FMT_MSA.3

FDP_IFC.1, Subset information flow control (8)

- FDP_IFC.1.1 (8) The TSF shall enforce the [Bluetooth_SFP] on [Bluetooth communication].

Dependencies: FDP_IFF.1

FDP_IFF.1, Simple security attributes (8)

- FDP_IFF.1.1 (8) The TSF shall enforce the [Bluetooth_SFP] based on the following types of subject and information security attributes: [
 - Device (subject):
 - Current IT policy configuration
 - Bluetooth communication (information)].

- FDP_IFF.1.2 (8) The TSF shall permit an information flow between a controlled subject and controlled information via a controlled operation if the following rules hold: [
 - If the **Disable Bluetooth** IT policy rule is set to FALSE then Bluetooth communication is permitted.].

- FDP_IFF.1.3 (8) The TSF shall enforce the following additional rules: [none].

- FDP_IFF.1.4 (8) The TSF shall provide the following additional capabilities: [none].

- FDP_IFF.1.5 (8) The TSF shall explicitly authorise an information flow based on the following rules: [none].

- FDP_IFF.1.6 (8) The TSF shall explicitly deny an information flow based on the following rules: [
 - If the **Disable Bluetooth** IT policy rule is set to TRUE then Bluetooth communication is not permitted.].

Dependencies: FDP_IFC.1, FMT_MSA.3

FDP_ITC.2, Import of user data with security attributes

FDP_ITC.2.1 The TSF shall enforce the [GME_SFP] when importing user data, controlled under the SFP, from the BlackBerry Infrastructure.

FDP_ITC.2.2 The TSF shall use the security attributes associated with the imported user data.

FDP_ITC.2.3 The TSF shall ensure that the protocol used provides for the unambiguous association between the security attributes and the user data received.

FDP_ITC.2.4 The TSF shall ensure that interpretation of the security attributes of the imported user data is as intended by the source of the user data.

FDP_ITC.2.5 The TSF shall enforce the following additional rules when importing user data controlled under the SFP from the BlackBerry Infrastructure: [none].

Dependencies: [FDP_ACC.1 or FDP_IFC.1], [FTP_ITC.1 or FTP_TRP.1], FPT_TDC.1

FDP_SDP_EXP.1, Stored data non-disclosure

FDP_SDP_EXP.1.1 The TSF shall protect user data stored within the TSC from unauthorised disclosure using [AES-256].

Dependencies: FCS_COP.1

FDP_SDP_EXP.2, Stored data deletion

FDP_SDP_EXP.2.1 The TSF shall delete all user data stored within the TSC when the following events occur: [

- The **Kill Handheld** IT command is received per ITCommand_SFP.
- The device user invokes a security wipe per FMT_SMF.1.
- The maximum number of unsuccessful authentication attempts is reached per FIA_AFL.1.

].

Dependencies: None.

Class FIA, Identification and Authentication

FIA_AFL.1, Authentication failure handling

FIA_AFL.1.1 The TSF shall detect when [*an administrator configurable positive integer within [3 and 10]*] unsuccessful authentication attempts occur related to [the number of unsuccessful authentication attempts since the last successful authentication].

FIA_AFL.1.2 When the defined number of unsuccessful authentication attempts has been met or surpassed, the TSF shall [perform a security wipe of all user data].

Dependencies: FIA_UAU.1

FIA_SOS.1, Verification of secrets

FIA_SOS.1.1 The TSF shall provide a mechanism to verify that secrets meet [a combination of the following metrics:

- The minimum length of the device password must be a BlackBerry Enterprise Server administrator configurable number between 4 and 14.
- The character composition of the device password must satisfy one of the following conditions chosen by the BlackBerry Enterprise Server administrator:
 - Contain at least one alpha and one numeric character
 - Contain at least one alpha, one numeric, and one special character
 - Contain at least one uppercase alpha, one lowercase alpha, one numeric, and one special character
- The device password cannot match a BlackBerry Enterprise Server administrator configurable number between 1 and 15 previous device passwords.

].

Dependencies: None

FIA_UAU.1, Timing of authentication

FIA_UAU.1.1 The TSF shall allow [the following actions:

- Display general status information (e.g. battery level, date, time, number of unread messages)
- Receive email, SMS, and PIN messages
- Receive calendar appointments
- Synchronise PIM data
- Receive cellular phone communication
- Send emergency cellular phone communication (e.g. 911)

] on behalf of the user to be performed before the user is authenticated.

FIA_UAU.1.2 The TSF shall require each user to be successfully authenticated before allowing any other TSF-mediated actions on behalf of that user.

Dependencies: FIA_UID.1

FIA_UAU.7, Protected authentication feedback

FIA_UAU.7.1 The TSF shall provide only [an asterisk for each character typed] to the user while authentication is in progress.

Dependencies: FIA_UAU.1

FIA_UID.1, Timing of identification

FIA_UID.1.1 The TSF shall allow [the actions specified in FIA_UAU.1.1] on behalf of the user to be performed before the user is identified.

FIA_UID.1.2 The TSF shall require each user to be successfully identified before allowing any other TSF-mediated actions on behalf of that user.

Dependencies: None

Class FMT, Security Management

FMT_MSA.1, Management of security attributes (1)

FMT_MSA.1.1 (1) The TSF shall enforce the [ITCommand_SFP and ITPolicy_SFP] to restrict the ability to [*modify*] the security attributes [IT command type and data] to [the BlackBerry Enterprise Server administrator].

Dependencies: [FDP_ACC.1 or FDP_IFC.1], FMT_SMF.1, FMT_SMR.1

FMT_MSA.1, Management of security attributes (2)

FMT_MSA.1.1 (2) The TSF shall enforce the [LocalAdmin_SFP, PIM_SFP, ApplicationDownload_SFP, ApplicationFlow_SFP, Cellular_SFP, SMS_SFP, and Bluetooth_SFP] to restrict the ability to [*modify*] the security attributes [current IT policy configuration] to [the BlackBerry Enterprise Server administrator].

Dependencies: [FDP_ACC.1 or FDP_IFC.1], FMT_SMF.1, FMT_SMR.1

FMT_MSA.1, Management of security attributes (3)

FMT_MSA.1.1 (3) The TSF shall enforce the [GME_SFP] to restrict the ability to [*modify*] the security attributes [current IT policy configuration and GME service book] to [the BlackBerry Enterprise Server administrator].

Dependencies: [FDP_ACC.1 or FDP_IFC.1], FMT_SMF.1, FMT_SMR.1

FMT_MSA.2, Secure security attributes

FMT_MSA.2.1 The TSF shall ensure that only secure values are accepted for security attributes.

Dependencies: ADV_SPM.1, [FDP_ACC.1 or FDP_IFC.1], FMT_MSA.1, FMT_SMR.1

FMT_MSA.3, Static attribute initialisation (1)

FMT_MSA.3.1 (1) The TSF shall enforce the [ITPolicy_SFP] to provide [*permissive*] default values for security attributes that are used to enforce the SFP.

FMT_MSA.3.2 (1) The TSF shall allow the [BlackBerry Enterprise Server administrator] to specify alternative initial values to override the default values when an object or information is created.

Dependencies: FMT_MSA.1, FMT_SMR.1

FMT_MSA.3, Static attribute initialisation (2)

FMT_MSA.3.1 (2) The TSF shall enforce the [LocalAdmin_SFP] to provide [*permissive*] default values for security attributes that are used to enforce the SFP.

FMT_MSA.3.2 (2) The TSF shall allow the [BlackBerry Enterprise Server administrator] to specify alternative initial values to override the default values when an object or information is created.

Dependencies: FMT_MSA.1, FMT_SMR.1

FMT_MSA.3, Static attribute initialisation (3)

FMT_MSA.3.1 (3) The TSF shall enforce the [GME_SFP] to provide [*permissive*] default values for security attributes that are used to enforce the SFP.

FMT_MSA.3.2 (3) The TSF shall allow the [BlackBerry Enterprise Server administrator] to specify alternative initial values to override the default values when an object or information is created.

Dependencies: FMT_MSA.1, FMT_SMR.1

FMT_MSA.3, Static attribute initialisation (4)

FMT_MSA.3.1 (4) The TSF shall enforce the [ITCommand_SFP] to provide [*restrictive*] default values for security attributes that are used to enforce the SFP.

FMT_MSA.3.2 (4) The TSF shall allow the [BlackBerry Enterprise Server administrator] to specify alternative initial values to override the default values when an object or information is created.

Dependencies: FMT_MSA.1, FMT_SMR.1

FMT_MSA.3, Static attribute initialisation (5)

FMT_MSA.3.1 (5) The TSF shall enforce the [PIM_SFP, ApplicationDownload_SFP, ApplicationFlow_SFP, Cellular_SFP, SMS_SFP, Bluetooth_SFP] to provide [*permissive*] default values for security attributes that are used to enforce the SFP.

FMT_MSA.3.2 (5) The TSF shall allow the [BlackBerry Enterprise Server administrator] to specify alternative initial values to override the default values when an object or information is created.

Dependencies: FMT_MSA.1, FMT_SMR.1

FMT_SAE.1, Time-limited authorisation

FMT_SAE.1.1 The TSF shall restrict the capability to specify an expiration time for [

- Device password (between 1 and 65535 days)

] to [the BlackBerry Enterprise Server administrator].

FMT_SAE.1.2 For each of the security attributes, the TSF shall be able to [

- Device password – force the user to change the password

]

] after the expiration time for the indicated security attribute has passed.

Dependencies: FMT_SMR.1, FPT_STM.1

FMT_SMF.1, Specification of management functions

FMT_SMF.1.1 The TSF shall be capable of performing the following security management functions: [

- On behalf of the device user:
 - Enable and disable the functionality specified in FDP_SDP_EXP.1 (unless prevented per LocalAdmin_SFP)
 - Set the time interval for FTA_SSL.1 (unless prevented per LocalAdmin_SFP)
 - Enable and disable session locking when the device is placed in its holster per FTA_SSL_EXP.4 (unless prevented per LocalAdmin_SFP)
 - Cooperatively generate a new master encryption key with the BlackBerry Enterprise Server
 - Perform a security wipe of the device per FDP_SDP_EXP.2
 - Enable and disable Bluetooth functionality (unless prevented per LocalAdmin_SFP)
 - Modify the device password
- On behalf of the BlackBerry Enterprise Server administrator:
 - Modify the peer-to-peer encryption key
 - Inject a new GME service book
 - Lock the TOE session and set the device password
 - Perform a security wipe of the device per FDP_SDP_EXP.2
 - Modify the device password
 - Apply an IT policy configuration to perform one or more of the following management functions:
 - Enable and disable the functionality specified in FDP_SDP_EXP.1
 - Configure the password length, pattern checks, and history per FIA_SOS.1
 - Enable and disable the password history per FIA_SOS.1
 - Enable and disable the functionality specified in FMT_SAE.1
 - Set the maximum time interval for FTA_SSL.1
 - Set the time interval for FTA_SSL.1
 - Enable and disable session locking when the device is placed in its holster per FTA_SSL_EXP.4
 - Configure the behaviour specified in PIM_SFP, ApplicationDownload_SFP, ApplicationFlow_SFP, Cellular_SFP, SMS_SFP, and Bluetooth_SFP

].

Dependencies: None

Class FPT, Protection of the TSF

FPT_STM.1, Reliable time stamps

FPT_STM.1.1 The TSF shall be able to provide reliable time stamps for its own use.

Dependencies: None

FPT_TDC.1, Inter-TSF basic TSF data consistency

FPT_TDC.1.1 The TSF shall provide the capability to consistently interpret [all data] when shared between the TSF and the BlackBerry Infrastructure.

FPT_TDC.1.2 The TSF shall use [the GME specification] when interpreting the TSF data from the BlackBerry Infrastructure.

Dependencies: None

Class FTA, TOE Access

FTA_SSL.1, TSF-initiated session locking

FTA_SSL.1.1 The TSF shall lock an interactive session after [a time interval of inactivity configurable per ITPolicy_SFP and LocalAdmin_SFP] by:

- a. clearing or overwriting display devices, making the current contents unreadable;
- b. disabling any activity of the user's data access/display devices other than unlocking the session.

FTA_SSL.1.2 The TSF shall require the following events to occur prior to unlocking the session: [user authentication].

Dependencies: FIA_UAU.1

FTA_SSL.2, User-initiated locking

FTA_SSL.2.1 The TSF shall allow user-initiated locking of the user's own interactive session by:

- a. clearing or overwriting display devices, making the current contents unreadable;
- b. disabling any activity of the user's data access/display devices other than unlocking the session.

FTA_SSL.2.2 The TSF shall require the following events to occur prior to unlocking the session: [user authentication].

Dependencies: FIA_UAU.1

FTA_SSL_EXP.4, Event-initiated session locking

FTA_SSL_EXP.4.1 The TSF shall lock an interactive session by:

- a. clearing or overwriting display devices, making the current contents unreadable;
- b. disabling any activity of the user's data access/display devices other than unlocking the session.

when the following events occur: [

- The device is placed in its holster, if so configured per LocalAdmin_SFP.
- The **Set Password and Lock** IT command is received per ITCommand_SFP.

].

FTA_SSL_EXP.4.2 The TSF shall require the following events to occur prior to unlocking the session: [user authentication].

Dependencies: FIA_UAU.1

Class FTP, Trusted Path / Channels

FTP_ITC.1, Inter-TSF trusted channel

FTP_ITC.1.1 The TSF shall provide a communication channel between itself and the BlackBerry Infrastructure that is logically distinct from other communication channels and provides assured identification of its end points and protection of the channel data from modification or disclosure.

FTP_ITC.1.2 The TSF shall permit [*the TSF, the BlackBerry Infrastructure*] to initiate communication via the trusted channel.

FTP_ITC.1.3 The TSF shall initiate communication via the trusted channel for [sending data to a BlackBerry Enterprise Server or another device].

Dependencies: None

TOE Security Assurance Requirements

The assurance requirements for the TOE are specified by the assurance components in the following table. The components are taken from Part 3 of the Common Criteria and are EAL 2 augmented, with augmented components listed in bold text.

Table 2. TOE Assurance Components

Assurance Class	Assurance Components
Configuration management	ACM_CAP.2, Configuration items
Delivery and operation	ADO_DEL.1, Delivery procedures
	ADO_IGS.1, Installation, generation, and start-up procedures
Development	ADV_FSP.1, Informal functional specification
	ADV_HLD.1, Descriptive high-level design
	ADV_RCR.1, Informal correspondence demonstration
Guidance documents	AGD_ADM.1, Administrator guidance
	AGD_USR.1, User guidance
Life cycle support	ALC_FLR.1, Basic flaw remediation

Assurance Class	Assurance Components
Tests	ATE_COV.1, Evidence of coverage
	ATE_FUN.1, Functional testing
	ATE_IND.2, Independent testing – sample
Vulnerability assessment	AVA_SOF.1, Strength of TOE security function evaluation
	AVA_VLA.1, Developer vulnerability analysis

Strength of TOE Security Functional Requirements

The overall strength of function (SOF) claim for the TOE security functional requirements is SOF-basic.

Security Requirements for the IT Environment

The following functional requirements are applicable to the IT environment.

Class FIA, Identification and Authentication

FIA_UID.2, User identification before any action (ENV)

FIA_UID.2.1 (ENV) The operating system upon which the BlackBerry Enterprise Server executes shall require each user to identify itself before allowing any other TSF-mediated actions on behalf of that user.

Dependencies: None

Class FMT, Security Management

FMT_SMR.1, Security roles (ENV)

FMT_SMR.1.1 (ENV) The BlackBerry Enterprise Server shall maintain the roles [BlackBerry Enterprise Server administrator].

FMT_SMR.1.2 (ENV) The BlackBerry Enterprise Server shall be able to associate users with roles.

Dependencies: FIA_UID.1

Class FPT, Protection of the TSF

FPT_AMT.1, Abstract machine testing (ENV)

FPT_AMT.1.1 (ENV) The BlackBerry BootROM shall run a suite of tests [*during initial start-up, [every subsequent start-up]*] to demonstrate the correct operation of the security assumptions provided by the abstract machine that underlies the TSF.

Dependencies: None

TOE Summary Specification

Security Functions

The TOE implements the following security functions:

F.GME Gateway Message Envelope Protocol

The TOE implements the RIM-proprietary GME protocol to wirelessly communicate with the BlackBerry Infrastructure for routing data to a BlackBerry Enterprise Server or another BlackBerry device. When sending data to either type of destination, the TOE sends its PIN, the data, and the identifier of the destination entity to the BlackBerry Infrastructure. The BlackBerry Infrastructure, in turn, routes the provided information. The identifier for a BlackBerry Enterprise Server is its UID, and the identifier for a BlackBerry device is its PIN. Receiving data from a BlackBerry Enterprise Server or another BlackBerry device is also accomplished through communication with the BlackBerry Infrastructure using the GME protocol. The communication between the TOE and the BlackBerry Infrastructure is initiated by the TOE when sending information from the TOE and is initiated by the BlackBerry Infrastructure when receiving information to the TOE. The TOE contains a GME service book that contains the UID of the BlackBerry Enterprise Server that administers the TOE.

The ability to send data to another BlackBerry device (i.e. send a PIN message) is determined by the value of the **Allow Peer-to-Peer Messages** IT policy rule, as described in F.ITPolicy.

F.Transport Secure Data Transport

Data transmitted between the TOE and a BlackBerry Enterprise Server or another BlackBerry device, as described in F.GME, is encrypted using AES-256 or Triple DES. If the destination is a BlackBerry Enterprise Server then the encryption algorithm is AES. If the destination is another BlackBerry device then the Triple DES algorithm is used.

When sending data, the TOE splits the data into 2 KB datagrams and encrypts each datagram with a unique session key created using the FIPS 186-2 PRNG. If the destination is a BlackBerry Enterprise Server then the session key is encrypted with the master encryption key, and if the destination is another BlackBerry device then the session key is encrypted with the peer-to-peer encryption key. The TOE then transmits the encrypted datagram and encrypted session key to the BlackBerry Infrastructure for routing, as described in F.GME.

When receiving data from a BlackBerry Enterprise Server or another BlackBerry device, the TOE selects the master encryption key or peer-to-peer encryption key accordingly and decrypts the encrypted session key. The session key is then used to decrypt the encrypted datagram.

F.Kernel BlackBerry Cryptographic Kernel

The BlackBerry Cryptographic Kernel is the cryptographic module responsible for supporting secure data transport from the TOE, wireless generation of a new master encryption key through key agreement, and the content protection feature. It implements the following cryptographic algorithms:

- AES-256 (CBC mode of operation)
- Triple DES (CBC mode of operation)
- SHA-1, -256, and -512
- HMAC SHA-1, -256, and -512
- RSA PKCS#1 (1024 bit, signature verification only)
- FIPS 186-2 Appendix 3.1 PRNG

- ECDSA (571 bit, signature verification only)
- EC Diffie-Hellman
- EC MQV

Version 3.8.3.7 of the BlackBerry Cryptographic Kernel is included in Handheld Software Version 4.1.0 and has been awarded FIPS 140-2 validation certificate no. 593.

F.Wireless Wireless Communication

The TOE provides the following wireless capabilities:

- Email messaging – The TOE allows the device user to send and receive email messages using their enterprise email account. Email messaging is accomplished by communication between the TOE and a BlackBerry Enterprise Server, as described in F.Transport.
- PIM synchronisation – The TOE bi-directionally synchronises PIM data with the user's enterprise email account via communication with the BlackBerry Enterprise Server, as described in F.Transport.
- PIN messaging – The TOE allows the device user to send and receive PIN messages to and from other BlackBerry devices, as described in F.Transport.
- Cellular phone – The TOE allows the device user to send and receive cellular phone communication.
- SMS messaging – The TOE allows the device user to send and receive SMS messages.
- Bluetooth communication – The TOE supports the Hands Free and Headset Bluetooth profiles that allow the TOE to communicate with other Bluetooth devices.

The TOE provides remote management capabilities of its wireless communication functionality through the use of IT policy, as described in F.ITPolicy.

F.Administration Local Administration

The TOE provides management capabilities that allow the device user to perform the following administrative functions:

- Lock device
- Modify device password
- Perform security wipe of the device
- Cooperatively generate new master encryption key with BlackBerry Enterprise Server

The TOE also allows the device user to perform the following administrative functions, dependent upon the IT policy configuration per F.ITPolicy:

- Modify security timeout
- Enable and disable device locking when holstered
- Enable and disable content protection
- Enable and disable Bluetooth functionality

F.ITCommand Wireless IT Commands

The TOE is able to execute IT commands issued by the BlackBerry Enterprise Server administrator. An IT command is only executed if the TOE determines that the source BlackBerry Enterprise Server is authorised to issue the command. The TOE determines proper authorisation by verifying that the timestamp of the IT command is not older than the timestamp of the most

recently executed IT command and that the UID of the source BlackBerry Enterprise Server matches the UID of the BlackBerry Enterprise Server that issued the current IT policy configuration. Depending on the IT command type, data may be included to support the execution of the IT command.

The TOE is able to execute the IT commands described in the following table.

Table 3. IT Commands

IT Command	Includes IT Command Data?	Description
Kill Handheld	No	Erases all user data on the device. The device is returned to its factory default settings and is no longer integrated with the email account of the device user.
Set Password and Lock	Yes	Sets the device password to the password specified in the IT command data and locks the device.
Set IT Policy	Yes	Sets the current IT policy configuration enforced by the TOE to the IT policy configuration specified in the IT command data. See F.ITPolicy for more information.

F.ITPolicy Wireless IT Policy

The TOE is able to enforce the IT policy configuration specified and issued by the BlackBerry Enterprise Server administrator. An IT policy configuration is only enforced if the TOE determines the source BlackBerry Enterprise Server is authorised to specify the configuration. The TOE determines proper authorisation by verifying that the ECDSA signature of the new IT policy configuration and the included ECDSA public key verifies successfully using the ECDSA public key included with the current IT policy configuration.⁵

If the TOE determines an IT policy configuration is to be enforced then it replaces the current IT policy configuration with the new configuration. If there is no current IT policy configuration then the new configuration is automatically enforced.

The TOE is able to enforce an IT policy configuration that consists of the IT policy rules specified in the following table, which is a subset of the entire set of IT policy rules supported by the TOE. Refer to *Baseline IT Policy Configuration* on page 59 for configuration information on the listed IT policy rules.

Table 4. IT Policy Rules

IT Policy Rule	Description
Allow Browser	Controls whether the user can use the default browser included on the device.
Allow External Connections	Controls whether third-party applications on the device can initiate external connections (e.g., to WAP or other public gateway).
Allow Internal Connections	Controls whether third-party applications on the device can initiate internal connections (e.g., to the Mobile Data Service).
Allow Peer-to-Peer Messages	Specifies whether device users can send PIN messages. This rule does not prevent device users from receiving PIN messages.
Allow Phone	Specifies whether device users can access phone capabilities. This rule does not prevent device users from making emergency phone calls.

⁵ Note that the conditions specified in F.ITCommand must be satisfied before the TOE will execute the **Set IT Policy** IT command.

IT Policy Rule	Description
Allow SMS	Specifies whether device users can send and receive SMS messages.
Allow Third Party Apps to Use Serial Port	Specifies whether third-party applications can use the USB port on the device.
Content Protection Strength	<p>Forces the use of the content protection feature and specifies the strength of the ECDH key pair used to generate an AES-256 key while the device is locked.</p> <p>Null – Content protection is not forcibly enabled</p> <p>0 – 160 bits</p> <p>1 – 256 bits</p> <p>2 – 521 bits</p>
Disable 3DES Transport Crypto	Forces the device to encrypt and decrypt packets to and from the BlackBerry Enterprise Server that sent the IT policy using AES instead of Triple DES.
Disable All Wireless Sync	Disables wireless synchronisation of PIM data.
Disable Bluetooth	Disables all Bluetooth support.
Disallow Third Party Application Downloads	Specifies whether third-party applications may be downloaded and installed on the device.
Enable Long Term Timeout	Controls whether the device locks after a predefined period of time, regardless of user activity.
Force Lock When Holstered	Specifies whether the device is locked when placed in the holster.
Maximum Password Age	<p>Specifies the number of days until a device password expires and the user is prompted to provide a new password.</p> <p>0 – The password never expires.</p> <p>1-65535 – The password expires after the specified number of days.</p>
Maximum Password History	<p>Specifies the maximum number of previous device passwords against which new passwords can be checked to prevent reuse of the old passwords.</p> <p>0 – The password is not checked against previous passwords.</p> <p>1-15 – The password is checked against the specified number of previous passwords.</p>
Maximum Security Timeout	Specifies the maximum time, in minutes, allowed before a device security timeout occurs. The device user can select any timeout value less than the maximum value.
Minimum Password Length	Specifies the minimum allowable length, in characters, of the device password.
Password Pattern Checks	<p>Creates a pattern check on the device password.</p> <p>0 – No restrictions.</p> <p>1 – The password must contain at least one alpha and one numeric character.</p> <p>2 – The password must contain at least one alpha, one numeric, and one special character.</p> <p>3 – The password must contain at least one uppercase alpha, one lowercase alpha, one numeric, and one special character.</p>
Password Required	Specifies whether the use of a device password is required.
Periodic Challenge Time	Specifies the interval, in minutes, after which the user is prompted to enter a password, regardless of user activity.
Set Maximum Password Attempts	Specifies the number of unsuccessful authentication attempts (i.e. the number of incorrect passwords entered) allowed on the device before the device data is erased and the device disabled.

IT Policy Rule	Description
Set Password Timeout	Specifies the amount of time, in minutes, before the security timeout occurs on the device.
Suppress Password Echo	Disables the echoing (printing to the screen) of characters typed into the device password screen ⁶ .
User Can Change Timeout	Specifies whether the device user can change the specified security timeout.

F.Authentication Authentication

The TOE provides a password-based authentication mechanism with the following functionality that can be configured per F.Administration or F.ITPolicy:

- Limited feedback during authentication (an asterisk is displayed for each character typed)
- Authentication failure handling (a security wipe of device executed after multiple failed authentication attempts)
- Password pattern checking
- Time-based password expiration, requiring the user to change the password
- Session locking, requiring user re-authentication, based on the following events:
 - A time interval of inactivity elapsing
 - User invocation
 - TOE placed in holster
 - **Set Password and Lock** IT command received per F.ITCommand

The following actions may be performed by the TOE prior to user authentication:

- Receive email, PIN, and SMS messages
- Receive calendar appointments
- Synchronise PIM data
- Receive cellular phone communication
- Make emergency cellular phone communication (e.g. 911)

F.Time Time

The TOE provides reliable date and time information.

F.Applications Third-Party Applications

The TOE provides the ability to download, install, and execute third-party applications subject to the restrictions specified by the BlackBerry Enterprise Server administrator per F.ITPolicy.

F.Content Protection of Stored Content

The TOE provides the content protection and security wipe features to protect stored user data from unauthorised disclosure. The content protection feature encrypts stored data using AES-256. When enabled, the content protection feature encrypts the following stored user data:

⁶ BlackBerry devices that use SureType® technology, such as the BlackBerry 7130e, briefly display feedback to the user before masking password characters with an asterisk

- Email – Subject, email addresses, message body, attachments
- Calendar – Subject, location, organiser, attendees, notes included in the appointment or meeting request
- MemoPad – Title, information in the note body
- Tasks – Subject, information in the task body
- Contacts – All information except for title and category
- Auto Text – All entries that the original text is replaced with
- BlackBerry Browser – Content that is pushed to the TOE, websites that are saved on the TOE, browser cache

If the content protection feature is enabled and the device receives new user data while locked, ECDH key agreement is used to generate a temporary AES-256 key to encrypt the new user data. The content protection feature may be enabled and configured by the user or BlackBerry Enterprise Server administrator per F.Administration and F.ITPolicy, respectively.

The security wipe feature programmatically erases all stored user data and can be invoked automatically or manually. If the TOE is configured to require user authentication then the feature is automatically invoked when the maximum number of unsuccessful authentication attempts is reached. The feature can also be invoked manually by the user or BlackBerry Enterprise Server administrator per F.Administration and F.ITCommand, respectively.

Strength of Function Claims

SOF claims are made for all permutational or probabilistic mechanisms that are non-cryptographic in nature. F.Authentication is the only such mechanism, therefore an SOF claim is made only for F.Authentication.

F.Authentication

The SOF claim for F.Authentication SOF-high.

Assurance Measures

The TOE implements the following assurance measures:

A.Configuration Configuration Management

There exists configuration management documentation that lists, uniquely identifies, and describes the configuration items that comprise the TOE. The configuration management system used to manage the TOE uniquely identifies all configuration items.

A.Delivery Delivery Procedures

There exists TOE delivery documentation that describes the procedures used to securely deliver the TOE.

A.Design Design Documentation

There exists TOE design documentation that consists of an informal functional specification, an informal high-level design, and an informal correspondence demonstration between the functional specification, high-level design, and the TOE summary specification.

A.Guidance Guidance Documentation

The TOE includes guidance documentation that consists of a User Guide.

A.Remediation **Flaw Remediation**

There exists TOE flaw remediation documentation that describes the procedures used to track reported TOE security flaws.

A.Testing **Developer Testing**

Developer testing of the TOE has been performed and there exists testing documentation that consists of functional test plans, procedures, and results and evidence of coverage of the TOE security functions.

A.Evaluator **Evaluator Testing**

The TOE has been provided to the evaluation facility for independent testing.

A.Assessment **Vulnerability Assessment**

A vulnerability assessment of the TOE and an analysis of the strength of the TOE security functions has been performed and documented.

Rationale

Security Objectives Rationale

The following table maps the security objectives to the assumptions, threats, and organisational policies identified for the TOE and its environment.

Table 5. Mapping of Security Objectives

	A.Network	A.ProperUser	T.DataDisclosure	T.LossOrTheft	T.ViolatePolicy	T.Modify	P.Provision	P.Policy	P.Notify	P.Wireless
O.DataExchange			X							
O.DataStorage				X						
O.Admin								X		
O.RemoteAdmin				X						
O.FlexibleAdmin								X		
O.NoOverride				X	X					
O.Wireless										X
O.Network	X									
O.ProperUser		X		X						
O.Notify									X	
O.Provision							X			
O.Integrity						X				
O.AdminID						X				

A.Network

The O.Network objective ensures the wireless network connectivity required by the TOE exists.

A.ProperUser

The O.ProperUser objective ensures the TOE user is trusted to interact with the TOE in compliance with the enterprise security policy and take precautions to reduce the risk of TOE loss or theft.

T.DataDisclosure

The O.DataExchange objective ensures the user data exchanged between the TOE and the BlackBerry Enterprise Server or another BlackBerry device cannot be disclosed by unauthorised entities.

T.LossOrTheft

The O.DataStorage objective ensures that the TOE may protect stored user data from unauthorised disclosure through the use of cryptographic means or deletion if the TOE is lost or stolen. The O.RemoteAdmin objective ensures that the BlackBerry Enterprise Server administrator may configure the security functions of the TOE and execute administrative

commands if the TOE is lost or stolen. The O.NoOverride objective ensures that the TOE user is not able to override the ability of the BlackBerry Enterprise Server administrator to remotely execute administrative commands if the TOE is lost or stolen. The O.ProperUser objective ensures that the TOE user exercises precautions to reduce the risk of loss or theft.

T.ViolatePolicy

The O.NoOverride objective ensures that the TOE user cannot override the remote management of the TOE security functions performed by the BlackBerry Enterprise Server administrator.

T.Modify

The O.Integrity objective ensures that the TOE has not been modified by an unauthorised individual by verifying the integrity of the TOE. The O.AdminID objective ensures that only authorised users gain access to the BlackBerry Enterprise Server functions and data.

P.Provision

The O.Provision objective ensures that the BlackBerry Enterprise Server administrator provisions the TOE for the intended TOE user prior to its use.

P.Policy

The O.Admin objective ensures that the TOE user can configure the TOE security functions to match the enterprise security policy. The O.FlexibleAdmin objective ensures that there is a high degree of flexibility in remotely managing the TOE security functions so that the TOE complies with the enterprise security policy.

P.Notify

The O.Notify objective ensures that the TOE user immediately notifies the BlackBerry Enterprise Server administrator if the TOE is lost or stolen.

P.Wireless

The O.Wireless objective ensures that the TOE supports the minimum methods of wireless communication.

Security Requirements Rationale

Satisfaction of Security Objectives

The following table maps the SFRs to the security objectives for the TOE and its environment.

Table 6. Mapping of SFRs to Security Objectives

	O.DataExchange	O.DataStorage	O.Admin	O.RemoteAdmin	O.FlexibleAdmin	O.NoOverride	O.Wireless	O.Integrity	O.AdminID				
FCS_VAL_EXP.1	X	X											
FCS_CKM.1 (1)	X	X											
FCS_CKM.1 (2)	X	X											
FCS_CKM.4	X	X											

	O.DataExchange	O.DataStorage	O.Admin	O.RemoteAdmin	O.FlexibleAdmin	O.NoOverride	O.Wireless	O.Integrity	O.AdminID					
FCS_COP.1	X	X												
FDP_ACC.1 (1)				X										
FDP_ACF.1 (1)				X										
FDP_ACC.1 (2)						X								
FDP_ACF.1 (2)						X								
FDP_ETC.2	X													
FDP_IFC.1 (1)	X			X			X							
FDP_IFF.1 (1)	X			X			X							
FDP_IFC.1 (2)				X										
FDP_IFF.1 (2)				X										
FDP_IFC.1 (3)				X			X							
FDP_IFF.1 (3)				X			X							
FDP_IFC.1 (4)				X										
FDP_IFF.1 (4)				X										
FDP_IFC.1 (5)				X			X							
FDP_IFF.1 (5)				X			X							
FDP_IFC.1 (6)				X			X							
FDP_IFF.1 (6)				X			X							
FDP_IFC.1 (7)				X			X							
FDP_IFF.1 (7)				X			X							
FDP_IFC.1 (8)				X			X							
FDP_IFF.1 (8)				X			X							
FDP_ITC.2	X													
FDP_SDP_EXP.1		X												
FDP_SDP_EXP.2		X												
FIA_AFL.1					X									
FIA_SOS.1					X									
FIA_UAU.1					X									
FIA_UAU.7					X									
FIA_UID.1					X									
FIA_UID.2 (ENV)									X					
FMT_MSA.1 (1)				X		X								
FMT_MSA.1 (2)				X		X								
FMT_MSA.1 (3)				X		X								

	O.DataExchange	O.DataStorage	O.Admin	O.RemoteAdmin	O.FlexibleAdmin	O.NoOverride	O.Wireless	O.Integrity	O.AdminID					
FMT_MSA.2	X	X												
FMT_MSA.3 (1)				X										
FMT_MSA.3 (2)						X								
FMT_MSA.3 (3)				X										
FMT_MSA.3 (4)				X										
FMT_MSA.3 (5)				X										
FMT_SAE.1					X									
FMT_SMF.1			X	X	X	X								
FMT_SMR.1 (ENV)									X					
FPT_AMT.1 (ENV)								X						
FPT_STM.1					X									
FPT_TDC.1	X													
FTA_SSL.1					X									
FTA_SSL.2			X											
FTA_SSL_EXP.4					X									
FTP_ITC.1	X													

O.DataExchange

FCS_CKM.1 (1), FCS_CKM.1 (2), FCS_CKM.4, and FCS_COP.1 ensure that the TOE implements the cryptographic functionality required to generate and destroy keys and encrypt and decrypt data. FCS_VAL_EXP.1 ensures that the cryptographic operations are implemented correctly.

FDP_IFC.1 (1) and FDP_IFF.1 (1) ensure that the TOE encrypts and decrypts data sent to and received from a BlackBerry Enterprise Server or another BlackBerry device.

FMT_MSA.2 ensures that only secure values can be used for cryptographic operations.

FDP_ETC.2, FDP_ITC.2, and FTP_TDC.1 ensure that the security attributes of the user data is correctly handled between the TOE and the BlackBerry Infrastructure.

FTP_ITC.1 ensures that the communication channel between the TOE and the BlackBerry Infrastructure is logically distinct.

O.DataStorage

FCS_CKM.1 (1), FCS_CKM.1 (2), FCS_CKM.4, and FCS_COP.1 ensure that the TOE implements the cryptographic functionality required to generate and destroy keys and encrypt and decrypt data. FCS_VAL_EXP.1 ensures that the cryptographic operations are implemented correctly.

FDP_SDP_EXP.1 ensures that stored user data is protected from unauthorised disclosure using cryptographic means, and FDP_SDP_EXP.2 ensures that all stored user data can be deleted to prevent disclosure.

FMT_MSA.2 ensures that only secure values can be used for cryptographic operations.

O.Admin

FMT_SMF.1 ensures that the TOE user can manage the TOE security functions.

FTA_SSL.2 ensures that the TOE user can lock the session with the TOE.

O.RemoteAdmin

FDP_ACC.1 (1), FDP_ACF.1 (1), FMT_MSA.1 (1), and FMT_MSA.3 (1) ensure that the BlackBerry Enterprise Server administrator can remotely manage the TOE security functions by issuing an IT policy configuration.

FDP_IFC.1 (1), FDP_IFF.1 (1), FMT_MSA.1 (3), and FMT_MSA.3 (3) ensure that the BlackBerry Enterprise Server administrator can remotely manage the communication between the TOE and the BlackBerry Enterprise Server.

FDP_IFC.1 (2), FDP_IFF.1 (2), FMT_MSA.1 (1), and FMT_MSA.3 (4) ensure that the BlackBerry Enterprise Server administrator can remotely manage the TOE security functions by issuing IT commands.

FDP_IFC.1 (3), FDP_IFF.1 (3), FMT_MSA.1 (2), and FMT_MSA.3 (5) ensure that the BlackBerry Enterprise Server administrator can manage the flow of PIM data to and from the TOE.

FDP_IFC.1 (4), FDP_IFF.1 (4), FMT_MSA.1 (2), and FMT_MSA.3 (5) ensure that the BlackBerry Enterprise Server administrator can manage the downloading of third-party applications to the TOE.

FDP_IFC.1 (5), FDP_IFF.1 (5), FMT_MSA.1 (2), and FMT_MSA.3 (5) ensure that the BlackBerry Enterprise Server administrator can manage the flow of data to and from third-party applications on the TOE.

FDP_IFC.1 (6), FDP_IFF.1 (6), FMT_MSA.1 (2), and FMT_MSA.3 (5) ensure that the BlackBerry Enterprise Server administrator can manage the flow of cellular phone communication to and from the TOE.

FDP_IFC.1 (7), FDP_IFF.1 (7), FMT_MSA.1 (2), and FMT_MSA.3 (5) ensure that the BlackBerry Enterprise Server administrator can manage the flow of SMS messaging to and from the TOE.

FDP_IFC.1 (8), FDP_IFF.1 (8), FMT_MSA.1 (2), and FMT_MSA.3 (5) ensure that the BlackBerry Enterprise Server administrator can manage the flow of Bluetooth communication to and from the TOE.

FMT_SMF.1 ensures that the BlackBerry Enterprise Server administrator can manage the security functions of the TOE.

O.FlexibleAdmin

FMT_SMF.1, FIA_AFL.1, FIA_UAU.1, FIA_UAU.7, FIA_UID.1, FTA_SSL.1, and FTA_SSL_EXP.4 ensure that the BlackBerry Enterprise Server administrator can manage the TOE authentication mechanism to comply with the enterprise security policy.

FMT_SMF.1, FIA_SOS.1, FMT_SAE.1, and FMT_STM.1 ensure that the BlackBerry Enterprise Server administrator can configure the TOE password handling to comply with the enterprise security policy.

O.NoOverride

FDP_ACC.1 (2) and FDP_ACF.1 (2) ensure that the TOE user cannot override the management of security functions performed by the BlackBerry Enterprise Server administrator.

FMT_MSA.1 (1), FMT_MSA.1 (2), FMT_MSA.1 (3), FMT_MSA.3 (2), and FMT_SMF.1 ensure that the BlackBerry Enterprise Server administrator can specify which security functions can be managed by the TOE user.

O.Wireless

FDP_IFC.1 (1) and FDP_IFF.1 (1) ensure that the TOE supports wireless email and PIN messaging.

FDP_IFC.1 (3) and FDP_IFF.1 (3) ensure that the TOE supports wireless PIM data synchronisation.

FDP_IFC.1 (5) and FDP_IFF.1 (5) ensure that the TOE supports wireless access to the enterprise network and the Internet.

FDP_IFC.1 (6) and FDP_IFF.1 (6) ensure that the TOE supports cellular phone communication.

FDP_IFC.1 (7) and FDP_IFF.1 (7) ensure that the TOE supports SMS messaging.

FDP_IFC.1 (8) and FDP_IFF.1 (8) ensure that the TOE supports communication with Bluetooth devices.

O.Integrity

FPT_AMT.1 (ENV) ensures the integrity of the TOE.

O.AdminID

FIA_UID.2 (ENV) ensures that the BlackBerry Enterprise Server administrator is successfully identified prior to managing security functions of the TOE.

FMT_SMR.1 (ENV) ensures that the BlackBerry Enterprise Server provides and associates users with the BlackBerry Enterprise Server administrator role.

Dependencies of Security Functional Requirements

The following table demonstrates that each SFR dependency is either satisfied or sufficient rationale provided.

Table 7. SFR Dependencies

Requirement	Dependencies	Satisfied By
FCS_VAL_EXP.1	FCS_CKM.4	FCS_CKM.4
	FCS_COP.1	FCS_COP.1
FCS_CKM.1 (1)	FCS_CKM.2 or FCS_COP.1	FCS_COP.1
	FCS_CKM.4	FCS_CKM.4
	FMT_MSA.2	FMT_MSA.2
FCS_CKM.1 (2)	FCS_CKM.2 or FCS_COP.1	FCS_COP.1
	FCS_CKM.4	FCS_CKM.4
	FMT_MSA.2	FMT_MSA.2

Requirement	Dependencies	Satisfied By
FCS_CKM.4	FDP_ITC.1 or FDP_ITC.2 or FCS_CKM.1	FCS_CKM.1 (1), FCS_CKM.1 (2)
	FMT_MSA.2	FMT_MSA.2
FCS_COP.1	FDP_ITC.1 or FDP_ITC.2 or FCS_CKM.1	FCS_CKM.1 (1), FCS_CKM.1 (2)
	FCS_CKM.4	FCS_CKM.4
	FMT_MSA.2	FMT_MSA.2
FDP_ACC.1 (1)	FDP_ACF.1	FDP_ACF.1 (1)
FDP_ACF.1 (1)	FDP_ACC.1	FDP_ACC.1 (1)
	FMT_MSA.3	FMT_MSA.3 (1)
FDP_ACC.1 (2)	FDP_ACF.1	FDP_ACF.1 (2)
FDP_ACF.1 (2)	FDP_ACC.1	FDP_ACC.1 (2)
	FMT_MSA.3	FMT_MSA.3 (2)
FDP_ETC.2	FDP_ACC.1 or FDP_IFC.1	FDP_IFC.1 (1)
FDP_IFC.1 (1)	FDP_IFF.1	FDP_IFF.1 (1)
FDP_IFF.1 (1)	FDP_IFC.1	FDP_IFC.1 (1)
	FMT_MSA.3	FMT_MSA.3 (3)
FDP_IFC.1 (2)	FDP_IFF.1	FDP_IFF.1 (2)
FDP_IFF.1 (2)	FDP_IFC.1	FDP_IFC.1 (2)
	FMT_MSA.3	FMT_MSA.3 (4)
FDP_IFC.1 (3)	FDP_IFF.1	FDP_IFF.1 (3)
FDP_IFF.1 (3)	FDP_IFC.1	FDP_IFC.1 (3)
	FMT_MSA.3	FMT_MSA.3 (5)
FDP_IFC.1 (4)	FDP_IFF.1	FDP_IFF.1 (4)
FDP_IFF.1 (4)	FDP_IFC.1	FDP_IFC.1 (4)
	FMT_MSA.3	FMT_MSA.3 (5)
FDP_IFC.1 (5)	FDP_IFF.1	FDP_IFF.1 (5)
FDP_IFF.1 (5)	FDP_IFC.1	FDP_IFC.1 (5)
	FMT_MSA.3	FMT_MSA.3 (5)
FDP_IFC.1 (6)	FDP_IFF.1	FDP_IFF.1 (6)
FDP_IFF.1 (6)	FDP_IFC.1	FDP_IFC.1 (6)
	FMT_MSA.3	FMT_MSA.3 (5)
FDP_IFC.1 (7)	FDP_IFF.1	FDP_IFF.1 (7)
FDP_IFF.1 (7)	FDP_IFC.1	FDP_IFC.1 (7)
	FMT_MSA.3	FMT_MSA.3 (5)
FDP_IFC.1 (8)	FDP_IFF.1	FDP_IFF.1 (8)
FDP_IFF.1 (8)	FDP_IFC.1	FDP_IFC.1 (8)
	FMT_MSA.3	FMT_MSA.3 (5)

Requirement	Dependencies	Satisfied By
FDP_ITC.2	FDP_ACC.1 or FDP_IFC.1	FDP_IFC.1 (1)
	FTP_ITC.1 or FTP_TRP.1	FTP_ITC.1
	FPT_TDC.1	FPT_TDC.1
FDP_SDP_EXP.1	FCS_COP.1	FCS_COP.1
FDP_SDP_EXP.2	None	–
FIA_AFL.1	FIA_UAU.1	FIA_UAU.1
FIA_SOS.1	None	–
FIA_UAU.1	FIA_UID.1	FIA_UID.1
FIA_UAU.7	FIA_UAU.1	FIA_UAU.1
FIA_UID.1	None	–
FIA_UID.2 (ENV)	None	–
FMT_MSA.1 (1)	FDP_ACC.1 or FDP_IFC.1	FDP_ACC.1 (1), FDP_IFC.1 (2)
	FMT_SMF.1	FMT_SMF.1
	FMT_SMR.1	FMT_SMR.1 (ENV)
FMT_MSA.1 (2)	FDP_ACC.1 or FDP_IFC.1	FDP_IFC.1 (3), FDP_IFC.1 (4), FDP_IFC.1 (5), FDP_IFC.1 (6), FDP_IFC.1 (7), FDP_IFC.1 (8)
	FMT_SMF.1	FMT_SMF.1
	FMT_SMR.1	FMT_SMR.1 (ENV)
FMT_MSA.1 (3)	FDP_ACC.1 or FDP_IFC.1	FDP_IFC.1 (1)
	FMT_SMF.1	FMT_SMF.1
	FMT_SMR.1	FMT_SMR.1 (ENV)
FMT_MSA.2	ADV_SPM.1	FIPS 140-2 finite state model ⁷
	FDP_ACC.1 or FDP_IFC.1	Not applicable ⁸
	FMT_MSA.1	Not applicable
	FMT_SMR.1	Not applicable
FMT_MSA.3 (1)	FMT_MSA.1	FMT_MSA.1
	FMT_SMR.1	FMT_SMR.1 (ENV)
FMT_MSA.3 (2)	FMT_MSA.1	FMT_MSA.1
	FMT_SMR.1	FMT_SMR.1 (ENV)
FMT_MSA.3 (3)	FMT_MSA.1	FMT_MSA.1
	FMT_SMR.1	FMT_SMR.1 (ENV)
FMT_MSA.3 (4)	FMT_MSA.1	FMT_MSA.1
	FMT_SMR.1	FMT_SMR.1 (ENV)

⁷ By meeting the requirements of FIPS 140-2, a finite state model of the TSF was prepared and demonstrated that the TSF is always in a known, secure state when accepting and utilising secure cryptographic values.

⁸ The TSF automatically generates symmetric keys and performs encryption and decryption as needed and does not require input or administration from the TOE user. Similarly, digital signature verification is performed automatically. Consequently, the dependencies on FDP_ACC.1 (or FDP_IFC.1), FMT_MSA.1, and FMT_SMR.1 are not applicable.

Requirement	Dependencies	Satisfied By
FMT_MSA.3 (5)	FMT_MSA.1	FMT_MSA.1
	FMT_SMR.1	FMT_SMR.1 (ENV)
FMT_SAE.1	FMT_SMR.1	FMT_SMR.1 (ENV)
	FPT_STM.1	FPT_STM.1
FMT_SMF.1	None	–
FMT_SMR.1 (ENV)	FIA_UID.1	FIA_UID.2 (ENV)
FPT_AMT.1 (ENV)	None	–
FPT_STM.1	None	–
FPT_TDC.1	None	–
FTA_SSL.1	FIA_UAU.1	FIA_UAU.1
FTA_SSL.2	FIA_UAU.1	FIA_UAU.1
FTA_SSL_EXP.4	FIA_UAU.1	FIA_UAU.1
FTP_ITC.1	None	–

Refinements of Security Functional Requirements on the TOE

FDP_ACF.1 (1) Security Attribute Based Access Control

In FDP_ACF.1.4 (1) “based on the” was changed to “based on the following additional rules” to improve legibility and does not affect the meaning of the functional requirement.

FDP_ACF.1 (2) Security Attribute Based Access Control

In FDP_ACF.1.4 (2) “based on the” was changed to “based on the following additional rules” to improve legibility and does not affect the meaning of the functional requirement.

FDP_ETC.2 Export of User Data with Security Attributes

The GME_SFP is only applicable for communication between the TOE and the BlackBerry Infrastructure, thus “to the BlackBerry Infrastructure” was added FDP_ETC.2.1 and FDP_ETC.2.4 for clarity. Also in FDP_ETC.2.4 “the following rules” was changed to “the following additional rules” to improve legibility and does not affect the meaning of the functional requirement.

FDP_IFF.1 (1) Simple Security Attributes

In FDP_IFF.1.3 (1) “enforce the” was changed to “enforce the following additional rules” and in FDP_IFF.1.4 (1) “provide the following” was changed to “provide the following additional capabilities”. Both refinements were made to improve legibility and do not affect the meaning of the functional requirement.

FDP_IFF.1 (2) Simple Security Attributes

In FDP_IFF.1.3 (2) “enforce the” was changed to “enforce the following additional rules” and in FDP_IFF.1.4 (2) “provide the following” was changed to “provide the following additional capabilities”. Both refinements were made to improve legibility and do not affect the meaning of the functional requirement.

FDP_IFF.1 (3) Simple Security Attributes

In FDP_IFF.1.3 (3) “enforce the” was changed to “enforce the following additional rules” and in FDP_IFF.1.4 (3) “provide the following” was changed to “provide the following additional

capabilities”. Both refinements were made to improve legibility and do not affect the meaning of the functional requirement.

FDP_IFF.1 (4) Simple Security Attributes

In FDP_IFF.1.3 (4) “enforce the” was changed to “enforce the following additional rules” and in FDP_IFF.1.4 (4) “provide the following” was changed to “provide the following additional capabilities”. Both refinements were made to improve legibility and do not affect the meaning of the functional requirement.

FDP_IFF.1 (5) Simple Security Attributes

In FDP_IFF.1.3 (5) “enforce the” was changed to “enforce the following additional rules” and in FDP_IFF.1.4 (5) “provide the following” was changed to “provide the following additional capabilities”. Both refinements were made to improve legibility and do not affect the meaning of the functional requirement.

FDP_IFF.1 (6) Simple Security Attributes

In FDP_IFF.1.3 (6) “enforce the” was changed to “enforce the following additional rules” and in FDP_IFF.1.4 (6) “provide the following” was changed to “provide the following additional capabilities”. Both refinements were made to improve legibility and do not affect the meaning of the functional requirement.

FDP_IFF.1 (7) Simple Security Attributes

In FDP_IFF.1.3 (7) “enforce the” was changed to “enforce the following additional rules” and in FDP_IFF.1.4 (7) “provide the following” was changed to “provide the following additional capabilities”. Both refinements were made to improve legibility and do not affect the meaning of the functional requirement.

FDP_IFF.1 (8) Simple Security Attributes

In FDP_IFF.1.3 (8) “enforce the” was changed to “enforce the following additional rules” and in FDP_IFF.1.4 (8) “provide the following” was changed to “provide the following additional capabilities”. Both refinements were made to improve legibility and do not affect the meaning of the functional requirement.

FDP_ITC.2 Import of User Data with Security Attributes

The GME_SFP is only applicable for communication between the TOE and the BlackBerry Infrastructure, thus “outside the TSC” was changed to “to the BlackBerry Infrastructure” in FDP_ITC.2.1 and FDP_ITC.2.5 for clarity. Also in FDP_ITC.2.5 “the following rules” was changed to “the following additional rules” to improve legibility and does not affect the meaning of the functional requirement.

FPT_TDC.1 Inter-TSF Basic TSF Data Consistency

The GME specification is only used for communication between the TSF and the BlackBerry Infrastructure, thus in FPT_TDC.1.1 and FPT_TDC.1.2 “another trusted IT product” was changed to “the BlackBerry Infrastructure” for clarity.

FTP_ITC.1 Inter-TSF Trusted Channel

The requirement is placed on communication between the TSF and the BlackBerry Infrastructure, thus “another trusted IT product” was changed to “the BlackBerry Infrastructure” in FPT_TDC.1.1 and FPT_TDC.1.2 for clarity.

Refinements of Security Functional Requirements for the IT Environment

Per section A.2.6 of Part 1, rationale is not required for refinement operations performed on functional requirements for the IT environment when clarifying that the requirement is not applicable to the TOE.

Explicit Security Functional Requirements

FCS_VAL_EXP.1 Cryptographic Module Validation

The Common Criteria does not provide an SFR to require that a cryptographic module contained with the TOE boundary meet the requirements of FIPS 140-2. The full statement of FCS_VAL_EXP.1 follows:

FCS_VAL_EXP.1, Cryptographic module validation

FCS_VAL_EXP.1.1 The following cryptographic modules of the TSF shall meet the requirements of FIPS 140-2, *Security Requirements for Cryptographic Modules*: [assignment: *list of cryptographic modules*].

Dependencies: FCS_CKM.4, FCS_COP.1

FDP_SDP_EXP.1 Stored Data Non-Disclosure

The Common Criteria does not provide an SFR to require that user data be protected from unauthorised disclosure using cryptographic functions. The full statement of FDP_SDP_EXP.1 follows:

FDP_SDP_EXP.1, Stored data non-disclosure

FDP_SDP_EXP.1.1 The TSF shall protect user data stored within the TSC from unauthorised disclosure using [assignment: *cryptographic algorithm*].

Dependencies: FCS_COP.1

FDP_SDP_EXP.2 Stored Data Deletion

The Common Criteria does not provide an SFR to require that all user data be deleted when specific actions occur. The full statement of FDP_SDP_EXP.2 follows:

FDP_SDP_EXP.2, Stored data deletion

FDP_SDP_EXP.2.1 The TSF shall delete all user data stored within the TSC when the following events occur: [assignment: *events that invoke action*].

Dependencies: None

FTA_SSL_EXP.4 Event-Initiated Session Locking

The Common Criteria does not provide an SFR to require that an interactive session with the TOE be locked when events other than user invocation or an elapsed time interval occur. The full statement of FTA_SSL_EXP.4 follows:

FTA_SSL_EXP.4, Event-initiated session locking

FTA_SSL_EXP.4.1 The TSF shall lock an interactive session by:

- a. clearing or overwriting display devices, making the current contents unreadable;
- b. disabling any activity of the user's data access/display devices other than unlocking the session.

when the following events occur: [assignment: *list of events*].

FTA_SSL_EXP.4.2 The TSF shall require the following events to occur prior to unlocking the session: [assignment: *events to occur*].

Dependencies: FIA_UAU.1

Selection of Security Assurance Requirements

The selection of EAL 2 assurance package is commensurate with the environment in which the TOE executes, and the augmentation of ALC_FLR.1 is appropriate to provide assurance to customers that security flaws are tracked and corrected.

The selected security assurance requirements are also applicable and appropriate for the explicitly stated security functional requirements, as the associated documentary evidence provide sufficient assurance for EAL 2, augmented by ALC_FLR.1.

Dependencies of Security Assurance Requirements

The following table demonstrates that all SAR dependencies are satisfied.

Table 8. SAR Dependencies

Requirement	Dependencies	Satisfied By
ACM_CAP.2	None	–
ADO_DEL.1	None	–
ADO_IGS.1	AGD_ADM.1	AGD_ADM.1
ADV_FSP.1	ADV_RCR.1	ADV_RCR.1
ADV_HLD.1	ADV_FSP.1	ADV_FSP.1
	ADV_RCR.1	ADV_RCR.1
ADV_RCR.1	None	–
AGD_ADM.1	ADV_FSP.1	ADV_FSP.1
AGD_USR.1	ADV_FSP.1	ADV_FSP.1
ALC_FLR.1	None	–
ATE_COV.1	ADV_FSP.1	ADV_FSP.1
	ATE_FUN.1	ATE_FUN.1
ATE_FUN.1	None	–
ATE_IND.2	ADV_FSP.1	ADV_FSP.1
	AGD_ADM.1	AGD_ADM.1
	AGD_USR.1	AGD_USR.1
	ATE_FUN.1	ATE_FUN.1
AVA_SOF.1	ADV_FSP.1	ADV_FSP.1
	ADV_HLD.1	ADV_HLD.1
AVA_VLA.1	ADV_FSP.1	ADV_FSP.1
	ADV_HLD.1	ADV_HLD.1
	AGD_ADM.1	AGD_ADM.1
	AGD_USR.1	AGD_USR.1

Refinements of Security Assurance Requirements on the TOE

Refinement operations are not performed on any of the SARs on the TOE.

TOE Security Specification

TOE Security Functions

The following table maps the TOE security functions to the SFRs.

Table 9. Mapping of TOE Security Functions to SFRs

	F.GME	F.Transport	F.Kernel	F.Wireless	F.Administration	F.ITCommand	F.ITPolicy	F.Authentication	F.Time	F.Applications	F.Content		
FCS_VAL_EXP.1			X										
FCS_CKM.1 (1)			X										
FCS_CKM.1 (2)			X										
FCS_CKM.4			X										
FCS_COP.1			X										
FDP_ACC.1 (1)							X						
FDP_ACF.1 (1)							X						
FDP_ACC.1 (2)					X								
FDP_ACF.1 (2)					X								
FDP_ETC.2	X												
FDP_IFC.1 (1)	X	X											
FDP_IFF.1 (1)	X	X											
FDP_IFC.1 (2)						X							
FDP_IFF.1 (2)						X							
FDP_IFC.1 (3)				X									
FDP_IFF.1 (3)				X									
FDP_IFC.1 (4)										X			
FDP_IFF.1 (4)										X			
FDP_IFC.1 (5)										X			
FDP_IFF.1 (5)										X			
FDP_IFC.1 (6)				X									
FDP_IFF.1 (6)				X									
FDP_IFC.1 (7)				X									
FDP_IFF.1 (7)				X									
FDP_IFC.1 (8)				X									
FDP_IFF.1 (8)				X									
FDP_ITC.2	X												
FDP_SDP_EXP.1											X		
FDP_SDP_EXP.2											X		

	F.GME	F.Transport	F.Kernel	F.Wireless	F.Administration	F.ITCommand	F.ITPolicy	F.Authentication	F.Time	F.Applications	F.Content		
FIA_AFL.1							X	X					
FIA_SOS.1							X	X					
FIA_UAU.1					X		X	X					
FIA_UAU.7							X	X					
FIA_UID.1					X		X	X					
FMT_MSA.1 (1)						X	X						
FMT_MSA.1 (2)						X	X						
FMT_MSA.1 (3)						X	X						
FMT_MSA.2			X										
FMT_MSA.3 (1)						X	X						
FMT_MSA.3 (2)							X						
FMT_MSA.3 (3)	X						X						
FMT_MSA.3 (4)						X	X						
FMT_MSA.3 (5)							X						
FMT_SAE.1							X	X					
FMT_SMF.1					X	X	X						
FPT_STM.1									X				
FPT_TDC.1	X												
FTA_SSL.1							X	X					
FTA_SSL.2								X					
FTA_SSL_EXP.4					X	X	X	X					
FTP_ITC.1	X												

FCS_VAL_EXP.1, Cryptographic module validation

The cryptographic module embedded in the TOE is validated to meet the requirements of FIPS 140-2 (F.Kernel).

FCS_CKM.1, Cryptographic key generation (1)

The cryptographic module embedded in the TOE is validated to FIPS 140-2 and generates keys using the FIPS 186-2 PRNG (F.Kernel).

FCS_CKM.1, Cryptographic key generation (2)

The cryptographic module embedded in the TOE is validated to FIPS 140-2 and generates keys using ECDH and ECMQV key agreement (F.Kernel).

FCS_CKM.4, Cryptographic key destruction

The cryptographic module embedded in the TOE is validated to FIPS 140-2 and destroys keys according to the FIPS 140-2 key zeroization requirements (F.Kernel).

FCS_COP.1, Cryptographic operation

The cryptographic module embedded in the TOE is validated to FIPS 140-2 and provides the required cryptographic functionality (F.Kernel).

FDP_ACC.1, Subset access control (1)

The TOE accepts and enforces valid IT policy configurations received from the BlackBerry Enterprise Server administrator (F.ITPolicy).

FDP_ACF.1, Security attribute based access control (1)

The TOE accepts and enforces valid IT policy configurations received from the BlackBerry Enterprise Server administrator (F.ITPolicy).

FDP_ACC.1, Subset access control (2)

The TOE user cannot override the IT policy configuration specified by the BlackBerry Enterprise Server administrator (F.Administration).

FDP_ACF.1, Security attribute based access control (2)

The TOE user cannot override the IT policy configuration specified by the BlackBerry Enterprise Server administrator (F.Administration).

FDP_ETC.2, Export of user data with security attributes

When sending data to the BlackBerry Infrastructure for routing to a BlackBerry Enterprise Server or another BlackBerry device, the GME protocol ensures that user data sent from the TOE is associated with the PIN of the TOE (F.GME).

FDP_IFC.1, Subset information flow control (1)

All communication between the TOE and a BlackBerry Enterprise Server or another BlackBerry device is routed by the BlackBerry Infrastructure, and the communication between the TOE and the BlackBerry Infrastructure follows the GME protocol (F.GME). All data transferred between the TOE and a BlackBerry Enterprise Server or another BlackBerry device is protected (F.Transport).

FDP_IFF.1, Simple security attributes (1)

All communication between the TOE and a BlackBerry Enterprise Server or another BlackBerry device is routed by the BlackBerry Infrastructure, and the communication between the TOE and the BlackBerry Infrastructure follows the GME protocol (F.GME). All data transferred between the TOE and a BlackBerry Enterprise Server or another BlackBerry device is protected (F.Transport).

FDP_IFC.1, Subset information flow control (2)

The TOE executes valid IT commands received from the BlackBerry Enterprise Server administrator (F.ITCommand).

FDP_IFF.1, Simple security attributes (2)

The TOE executes valid IT commands received from the BlackBerry Enterprise Server administrator (F.ITCommand).

FDP_IFC.1, Subset information flow control (3)

The TOE synchronises PIM data with the user's enterprise email account (F.Wireless).

FDP_IFF.1, Simple security attributes (3)

The TOE synchronises PIM data with the user's enterprise email account (F.Wireless).

FDP_IFC.1, Subset information flow control (4)

The TOE provides the ability to download third-party applications (F.Applications).

FDP_IFF.1, Simple security attributes (4)

The TOE provides the ability to download third-party applications (F.Applications).

FDP_IFC.1, Subset information flow control (5)

The TOE provides internal and external network access to third-party applications (F.Applications).

FDP_IFF.1, Simple security attributes (5)

The TOE provides internal and external network access to third-party applications (F.Applications).

FDP_IFC.1, Subset information flow control (6)

The TOE provides cellular phone communication functionality (F.Wireless).

FDP_IFF.1, Simple security attributes (6)

The TOE provides cellular phone communication functionality (F.Wireless).

FDP_IFC.1, Subset information flow control (7)

The TOE provides SMS messaging functionality (F.Wireless).

FDP_IFF.1, Simple security attributes (7)

The TOE provides SMS messaging functionality (F.Wireless).

FDP_IFC.1, Subset information flow control (8)

The TOE provides Bluetooth communication functionality (F.Wireless).

FDP_IFF.1, Simple security attributes (8)

The TOE provides Bluetooth communication functionality (F.Wireless).

FDP_ITC.2, Import of user data with security attributes

When receiving data from a BlackBerry Enterprise Server or another BlackBerry device, the GME protocol ensures that user data sent to the TOE from the BlackBerry Infrastructure is associated with the PIN of the device (F.GME).

FDP_SDP_EXP.1, Stored data non-disclosure

The TOE is capable of cryptographically protecting stored user data (F.Content).

FDP_SDP_EXP.2, Stored data deletion

The TOE is capable of protected stored user data from unauthorised disclosure by programmatically erasing all user data (F.Content).

FIA_AFL.1, Authentication failure handling

The TOE can be configured to perform a security wipe of all user data after a configurable number of failed authentication attempts (F.ITPolicy, F.Authentication).

FIA_SOS.1, Verification of secrets

The TOE can be configured to enforce quality metrics on the TOE password (F.ITPolicy, F.Authentication).

FIA_UAU.1, Timing of authentication

The TOE can be configured to require password-based user authentication (F.Administration, F.ITPolicy, F.Authentication).

FIA_UAU.7, Protected authentication feedback

The TOE can be configured to display an asterisk for each character typed during the authentication process (F.ITPolicy, F.Authentication).

FIA_UID.1, Timing of identification

The TOE can be configured to require password-based user authentication (F.Administration, F.ITPolicy, F.Authentication).

FMT_MSA.1, Management of security attributes (1)

The TOE executes IT commands and enforces IT policy configurations issued by the BlackBerry Enterprise Server administrator (F.ITCommand, F.ITPolicy).

FMT_MSA.1, Management of security attributes (2)

The TOE executes IT commands and enforces IT policy configurations issued by the BlackBerry Enterprise Server administrator (F.ITCommand, F.ITPolicy).

FMT_MSA.1, Management of security attributes (3)

The TOE executes IT commands and enforces IT policy configurations issued by the BlackBerry Enterprise Server administrator (F.ITCommand, F.ITPolicy).

FMT_MSA.2, Secure security attributes

The BlackBerry Cryptographic Kernel ensures that only secure cryptographic values are accepted and utilised, per the requirements of FIPS 140-2 (F.Kernel).

FMT_MSA.3, Static attribute initialisation (1)

The IT command type and data and UID of source BlackBerry Enterprise Server are specified by the BlackBerry Enterprise Server administrator (F.ITCommand, F.ITPolicy).

FMT_MSA.3, Static attribute initialisation (2)

The IT policy configuration enforced by the TOE, which consequently limits the administrative abilities of the TOE user, is specified by the BlackBerry Enterprise Server administrator (F.ITPolicy).

FMT_MSA.3, Static attribute initialisation (3)

The IT policy configuration enforced by the TOE is specified by the BlackBerry Enterprise Server administrator (F.ITPolicy). The GME service book of the TOE is issued by the BlackBerry Enterprise Server administrator (F.GME).

FMT_MSA.3, Static attribute initialisation (4)

The IT command type and data and UID of source BlackBerry Enterprise Server are specified by the BlackBerry Enterprise Server administrator (F.ITCommand, F.ITPolicy).

FMT_MSA.3, Static attribute initialisation (5)

The IT policy configuration enforced by the TOE is specified by the BlackBerry Enterprise Server administrator (F.ITPolicy).

FMT_SAE.1, Time-limited authorisation

The BlackBerry Enterprise Server administrator can specify an expiration time for the TOE password, which when elapsed forces the user to change the password (F.ITPolicy, F.Authentication).

FMT_SMF.1, Specification of management functions

The TOE provides management capabilities to the local user (F.Administration) and the BlackBerry Enterprise Server administrator (F.ITCommand, F.ITPolicy).

FPT_STM.1, Reliable time stamps

The TOE provides reliable date and time information (F.Time).

FPT_TDC.1, Inter-TSF basic TSF data consistency

The TOE communicates with the BlackBerry Infrastructure using the GME protocol (F.GME).

FTA_SSL.1, TSF-initiated session locking

The interactive session with the TOE locks after a specified time interval of inactivity configured by the BlackBerry Enterprise Server administrator (F.Authentication, F.ITPolicy).

FTA_SSL.2, User-initiated locking

The user can lock the interactive session with the TOE (F.Authentication).

FTA_SSL_EXP.4, Event-initiated session locking

The BlackBerry Enterprise Server administrator can lock the user's interactive session with the TOE by issuing the **Set Password and Lock** IT command (F.Authentication, F.ITCommand). The interactive session with the TOE can be configured to lock after the TOE is placed in its holster (F.Administration, F.Authentication, F.ITPolicy).

FTP_ITC.1, Inter-TSF trusted channel

The GME protocol ensures a distinct communication channel between the TOE and the BlackBerry Infrastructure, where either entity can initiate communication (F.GME).

TOE Assurance Measures

The following table maps the TOE assurance measures to the SARs.

Table 10. Mapping of TOE Assurance Measures to SARs

	A.Configuration	A.Delivery	A.Design	A.Guidance	A.Remediation	A.Testing	A.Evaluator	A.Assessment			
ACM_CAP.2	X										
ADO_DEL.1		X									
ADO_IGS.1				X							
ADV_FSP.1			X								
ADV_HLD.1			X								
ADV_RCR.1			X								
AGD_ADM.1				X							
AGD_USR.1				X							
ALC_FLR.1					X						
ATE_COV.1						X					
ATE_FUN.1						X					
ATE_IND.2							X				
AVA_SOF.1								X			
AVA_VLA.1								X			

ACM_CAP.2, Configuration items

There exists configuration management documentation, and the configuration management system used to manage the TOE uniquely identifies all configuration items (A.Configuration).

ADO_DEL.1, Delivery procedures

There exist documented delivery procedures (A.Delivery).

ADO_IGS.1, Installation, generation, and start-up procedures

The TOE includes installation guidance documentation (A.Guidance).

ADV_FSP.1, Informal functional specification

There exists design documentation (A.Design).

ADV_HLD.1, Descriptive high-level design

There exists design documentation (A.Design).

ADV_RCR.1, Informal correspondence demonstration

There exists design documentation (A.Design).

AGD_ADM.1, Administrator guidance

The TOE includes administrator guidance documentation (A.Guidance).

AGD_USR.1, User guidance

The TOE includes user guidance documentation (A.Guidance).

ALC_FLR.1, Basic flaw remediation

There exists flaw remediation procedures documentation (A.Remediation).

ATE_COV.1, Evidence of coverage

Developer testing of the TOE has been performed and there exists testing documentation (A.Testing).

ATE_FUN.1, Functional testing

Developer testing of the TOE has been performed and there exists testing documentation, including evidence of testing coverage (A.Testing).

ATE_IND.2, Independent testing – sample

The TOE has been provided to the evaluation facility (A.Evaluator).

AVA_SOF.1, Strength of TOE security function evaluation

An analysis of the strength of the TOE security functions has been performed and documented (A.Assessment).

AVA_VLA.1, Developer vulnerability analysis

A vulnerability assessment of the TOE has been performed and documented (A.Assessment).

Baseline IT Policy Configuration

The baseline IT policy configuration is the evaluated configuration of the TOE that provides the most flexibility to tailor the listed IT policy rules to comply with an enterprise security policy. The deployed configuration of the TOE shall be at least as restrictive as the baseline configuration. The following table identifies the valid range of values, default value, and baseline value for each IT policy rule specified F.ITPolicy. With the exception of the values marked with an asterisk (“*”), modifying the baseline values will result in a more restrictive configuration, and thus may be configured to comply with an enterprise security policy while maintaining an evaluated configuration.

Table 11. Baseline IT Policy Configuration

IT Policy Rule	Value		
	Range	Default	Baseline
Global Policy Group			
Allow Browser	{True, False}	True	True
Allow Phone	{True, False}	True	True
Security Policy Group			
Allow External Connections	{True, False}	True	True
Allow Internal Connections	{True, False}	True	True
Allow Third Party Apps to Use Serial Port	{True, False}	True	True
Content Protection Strength	0-2	Null	Null
Disable 3DES Transport Crypto	{True, False}	False	True*
Disallow Third Party Application Downloads	{True, False}	False	False
Force Lock When Holstered	{True, False}	False	False
Device-Only Policy Group			
Allow Peer-to-Peer Messages	{True, False}	True	True
Allow SMS	{True, False}	True	True
Enable Long Term Timeout	{True, False}	False	False
Maximum Password Age	0-65535	0	0
Maximum Security Timeout	{1, 2, 5, 10, 15, 20, 30, 60}	60	60 ⁹
Minimum Password Length	4-14	4	4
Password Pattern Checks	0-3	0	1 ¹⁰
Password Required	{True, False}	False	True*
User Can Change Timeout	{True, False}	True	True
PIM Synch Policy Group			
Disable All Wireless Sync	{True, False}	False	False
Bluetooth Policy Group			

⁹ The allowed range of values for the Maximum Security Timeout IT policy is {2, 5, 10, 15, 20, 30, 60}. A value of 1 is not allowed in the evaluated configuration.

¹⁰ The allowed range of values for the Password Pattern Checks IT policy rule is 1-3. A value of 0 is not allowed in the evaluated configuration..

IT Policy Rule	Value		
	Range	Default	Baseline
Disable Bluetooth	{True, False}	False	False
Password Policy Group			
Maximum Password History	0-15	0	0
Periodic Challenge Time	1-60	Null	Null
Set Maximum Password Attempts	3-10	10	10
Set Password Timeout	1-60	60	60
Suppress Password Echo	{True, False}	False	True*

Glossary

AES	Advanced Encryption Standard
ANSI	American National Standards Institute
CBC	Cipher block chaining
CDMA	Code division multiple access
CLDC	Connected limited device configuration
EAL	Evaluation assurance level
ECDH	Elliptic curve Diffie-Hellman
ECDSA	Elliptic curve Digital Signature Algorithm
ECMQV	Elliptic curve Menezes, Qu, Vanstone
EDGE	Enhanced Data GSM Environment
EVDO	Evolution for Data Only
FIPS	Federal Information Processing Standard
GME	Gateway message envelope
GPRS	GSM general packet radio service
GSM	Global system for mobile communication
HMAC	Keyed-hashed message authentication code
iDEN	Integrated digital enhanced network
IEEE	Institute of Electrical and Electronics Engineers
IT	Information technology
MB	Megabytes
MIDP	Mobile information device profile
PIM	Personal information management
PIN	Personal identification number
PRNG	Pseudo-random number generator
RIM	Research In Motion
RNG	Random number generator
SAR	Security assurance requirement
SFP	Security functional policy
SFR	Security functional requirement
SHA	Secure Hash Algorithm
SMS	Short Messaging Service
TOE	Target of evaluation
Triple DES	Triple Data Encryption Standard
TSC	TOE scope of control
TSF	TOE security function
UID	Unique identifier

*Check with service provider for availability, roaming arrangements and service plans. Certain features outlined in this document require a minimum version of BlackBerry Enterprise Server software, BlackBerry Desktop Software, and/or BlackBerry handheld software. May require additional application development. Prior to subscribing to or implementing any third party products or services, it is your responsibility to ensure that the airtime service provider you are working with has agreed to support all of the features of the third party products and services. Installation and use of third party products and services with RIM's products and services may require one or more patent, trademark or copyright licenses in order to avoid infringement of the intellectual property rights of others. You are solely responsible for determining whether such third party licenses are required and are responsible for acquiring any such licenses. To the extent that such intellectual property licenses may be required, RIM expressly recommends that you do not install or use these products and services until all such applicable licenses have been acquired by you or on your behalf. Your use of third party software shall be governed by and subject to you agreeing to the terms of separate software licenses, if any, for those products or services. Any third party products or services that are provided with RIM's products and services are provided "as is". RIM makes no representation, warranty or guarantee whatsoever in relation to the third party products and services and RIM assumes no liability whatsoever in relation to the third party products and services even if RIM has been advised of the possibility of such damages or can anticipate such damages.

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