Site Security Target Ningbo CTWY Production Center

|  |  |  |
| --- | --- | --- |
| Author | Reviewer | Approver |
|  |  |  |

**SPECIAL NOTE**Contents of this document that has been highlighted in blue colour text, like this paragraph itself, will be removed from the public version, named SST Lite. The presence of such contents on the current document denotes that this is the full version of the SST.

**Version Control**

|  |  |  |
| --- | --- | --- |
| **Version** | **Date** | **Description** |
| 0.1 | 28/10/2019 | First document release |
| 0.2 | 30/10/2019 | Company name changed. Minor changes are also included in this version. |
| 0.3 | 25/03/2020 | Minor changes for some inconsistences |
| 0.4 | 19/10/2020 | Minor changes for some inconsistences and version changed |

**Contents**

[1 Document Information 4](#_Toc36047281)

[1.1 Reference 4](#_Toc36047282)

[2 SST Introduction 5](#_Toc36047283)

[2.1 Identification of the Site 5](#_Toc36047284)

[2.2 Site Description 5](#_Toc36047285)

[3 Conformance Claim 7](#_Toc36047286)

[4 Security Problem Definition 8](#_Toc36047287)

[4.1 Assets 8](#_Toc36047288)

[4.2 Threats 8](#_Toc36047289)

[4.3 Organizational Security Policies 10](#_Toc36047290)

[4.4 Assumptions 12](#_Toc36047291)

[5 Security Objectives 14](#_Toc36047292)

[5.1 Security Objectives Rationale 17](#_Toc36047293)

[6 Extended Assurance Components Definition 23](#_Toc36047294)

[7 Security Assurance Requirements 24](#_Toc36047295)

[7.1 Application Notes and Refinements 24](#_Toc36047296)

[7.2 Security Assurance Rationale 26](#_Toc36047297)

[8 Site Summary Specification 31](#_Toc36047298)

[8.1 Preconditions Required by the Site 31](#_Toc36047299)

[8.2 Services of the Site 31](#_Toc36047300)

[8.3 Objectives Rationale 32](#_Toc36047301)

[8.4 SAR Rationale 37](#_Toc36047302)

[8.5 Assurance Measure Rationale 38](#_Toc36047303)

[8.6 Mapping of the Evaluation Documentation 42](#_Toc36047304)

[9 Bibliography 47](#_Toc36047305)

1. Document Information
   1. Reference

Title: Site Security Target Ningbo CTWY Production Centre

Version: 0.3

Date: 25/03/2020

Company: Chengtian Weiye (Ningbo) Chip Technology Co.,Ltd

Name of the site: Ningbo Chengtian Weiye Production Centre

Product Type: Security IC

Evaluation Assurance Components: ALC\_CMC.4, ALC\_CMS.5, ALC\_DVS.2 and ALC\_LCD.1.

1. SST Introduction

This chapter is divided into the section 2.1 Identification of the Site and 2.2 Site Description.

This Site Security Target refers to the following site:

Ningbo Chengtian Weiye Production Centre

This site is used for chips encapsulation production.

* 1. Identification of the Site

The site name is Ningbo Chengtian Weiye Production Centre (hereinafter referred to as “CTWY”), which is located at;

*No.8, Binjiang Road,*

*Cixi High-tech Industrial Development Zone,*

*Ningbo City, Zhejiang Province, P. R. China.*

This location is a building, which belongs Chengtian Weiye (Ningbo) Chip Technology Co.,Ltd, described as Ningbo Chengtian Weiye Production Centre. This building consists of only one floor; The production floor which conducts the electric testing, IC assembly and packaging into rails. More information about the services, refer to section 2.2 Site Description. Delivery bay is also located in the same floor. The main network and server room located in the same floor.

* 1. Site Description

There are three sides of perimeter walls and one side of a river surrounded the factory premise. An entry gate of the perimeter wall guarded by security guard. CCTV cameras are deployed in both the perimeter walls and the premise’s wall facing the river and all the CCTV cameras are connected to the security room located within the premise.

Security guard will cruise the roads within the perimeter walls every two hours during daily time. Security guard will be on duty for 24 hours and 7 days per week.

Access to the factory premise is controlled by doors equipped with physical access control system where the control panel of the system is deployed in security control server room.

The whole floor from the main building in Ningbo CTWY Production Centre and the network & server room are located in the same building. Both are in the scope of this SST. Additionally, guard services, access control and surveillance restrict and control the access to CTWY production area. The site includes security control room, security control server room, vault, receiving/sending area, security IC packaging workshop, IT server room and reliability testing room.

The following service and/or processes provided by CTWY are in the scope of the evaluation process:

* Reception, identification, registration and storage of sawn wafers.
* Wire bonding
* Die bonding
* Quality control testing for incoming raw materials and production process
* Visual inspection of finished modules
* Warehousing and dispatch of finished modules
* Scrap recycle and return to clients if required.

The complete flow of the security IC modules for smart card product at the site is covered by the SST. In addition, the management of the security IC modules for IC embedding processes and the site security are covered by the SST. The production flow of the security IC modules on the site starts with the receipt of parts of the product (raw materials) up to the packing and handover for shipment of the finished security IC modules.

The following life-cycle phase of the Security IC modules is subject of the SST according to protection profile (1).

* Life cycle phase 4: IC Packaging
  + Security IC packaging (and testing)

1. Conformance Claim

The evaluation is based on Common Criteria Version 3.1, Revision 5.

* Common Criteria for Information Technology Security Evaluation, Part1: Introduction and general model; Version 3.1, Revision 5, April 2017, (2)
* Common Criteria for Information Technology Security Evaluation, Part3: Security assurance components; Version 3.1, Revision 5, April 2017, (3)

For the evaluation, the methodology will be used:

* Common Methodology for Information Technology Security Evaluation: Evaluation methodology. Version 3.1, Revision 5, April 2017, (4)

This Site Security Target (SST) is CC Part 3 conformant with EAL5+ and therefore covers the following CC assurance components:

ALC\_CMC.4, ALC\_CMS.5, ALC\_DVS.2 and ALC\_LCD.1.

The assurance components chosen for the SST are taken from the definition of the EAL5+ package defined in (3), because this is the level usually applied in Smart Card and similar chips evaluations related with PP0084.

For the assessment of the security measures attackers with high attack potential are assumed. This allows an evaluation of products using this site according to the assurance component AVA\_VAN.5.

1. Security Problem Definition

The Security Problem Definition comprises security problems derived from threats against the assets handled by the site and security problems derived from the configuration management. The configuration management covers the integrity of the products and the security management of the site.

This Site Security Target is based on the life cycle defined in the Security IC Platform Protection Profile (1). The assets (Section 4.1), threats (Section 4.2) and Organizational Security Policies (OSP) (Section 4.3) defined in this document are derived from the life cycle defined in that PP.

The Security Problem Definition comprises two major so-called security problems. The first set of security problems comprises all kinds of attacks regarding theft (e.g. samples) or disclosure (e.g. design data) or manipulation of assets. These security problems are described in terms of threats. The second set of security problems comprises the requirements for the configuration management (e.g. controlled modification) and the control of security measures. These security problems are described in terms of Organizational Security Policies (OSP).

* 1. Assets

The following section describes the assets handled at the site.

* + 1. IC Assembly

Sensitive products:

* Sawn wafer.
* Finished products as modules or other packages.
* Sensitive production systems or configuration systems.
* Security relevant production processes.
* Finished product in rail.
* Raw material to be used for production.

Some specific assets like anti-tamper labels, special transport protection or similar items that support the security of the internal shipment to the client are handled in the same way as the other assets to prevent misuse, disclosure or lost.

* 1. Threats

All threats endanger the integrity and confidentiality of the intended TOE and the representation of parts of the TOE. The intended TOE protects itself in life-cycle phase 7. However, during the production, test and assembly the TOE and the representation of parts of the TOE are vulnerable to such attacks.

The following threats are described in a general way. However, they are applicable to the site that provides services handling the items listed in Section 4.1 above. The explanation below the threats shall support the mapping to the Security Objectives of the site.

**T.Smart-Theft:**

An attacker tries to access sensitive areas of the site for manipulation or theft of TOE parts on production. The attacker has sufficient time to investigate the site out-side the controlled boundary. For the attack the usage of standard equipment for burglary is considered. In addition, the attacker may be able to use specific working clothes of the site to camouflage the intention.

This attack already includes a variety of targets and aspects with respect to the various assets listed in the section above. It shall cover the range of individuals that try to get unregistered or defect chips that can be used to further investigate the functionality of the chip and search for possible exploits. Such an attacker will have limited resources and a low financial budget to prepare the attack. However, the time that can be spent by such an attacker to prepare the attack and the flexibility of such an attacker will provide notable risk.

**T.Rugged-Theft**

An experienced thief with specialized equipment for burglary, who may be paid to perform the attack tries to access sensitive areas and manipulate or steal TOE parts in production.

Although this attack is applicable for each site the risk may be different regarding the assets. These attackers may be prepared to take high risks for payment. They are sufficiently resourced to circumvent security measures and do not consider any damage of the affected company. The target of the attack may be products that can be sold or misused in an application context. This can comprise chips at a specific testing or personalization state for cloning or introduction of forged chips. Those attackers are considered to have the highest attack potential.

Such attackers may not be completely defeated by the physical, technical and procedural security measures. Special measures like storage of items in safes or strong rooms or the splitting of sensitive data like keys provide additional support against such attacks. Also, the unique registration of the products can support the protection if they can be disabled or blocked.

**T.Computer-Net**

A hacker with substantial expertise, standard equipment, who may be paid to attempt to remotely access sensitive network segments to get access to sensitive configuration data or items or modify security relevant production processes.

**T.Accidental-Change**

An employee, contractor or student trainee may exchange products of different production lots or different clients during production by accident.

Employees, contractors or student trainees that are not trained may take products or influence production systems without considering possible impacts or problems. This threat includes accidental changes e.g. due to working tasks of student trainees or maintenance tasks of contractors within the development, production or test area.

Such accidental changes can include the modification of configurations for tools that may have an impact on the TOE, the wrong assignment of tools for a dedicated process step. Further examples may be machine failure or misalignment between operators that are responsible for products of different clients or different products of the same client are mixed during production. This also includes the disposal of sensitive products using the standard flow and not the controlled destruction.

**T.Unauthorised-Staff**

Employees or subcontractors not authorized to get access to products or systems used for production get access to products or affect production systems, so that the confidentiality and/or the integrity of the product is violated. This can apply to any TOE parts in production.

Also, other subcontractors like cleaning staff or maintenance staff for the building get limited access that may allow them to start an attack. The disposal of defect equipment and/or TOE parts items must be considered.

**T.Staff-Collusion**

An attacker tries to get access to sensitive data or items stored or processed at the site. The attacker tries to get support from one employee or more employees through an attempted extortion or an attempt at bribery.

**T.Attack-Transport**

An attacker might try to get information or products during the internal shipment and/or the external delivery. The target is to compromise confidential information or violate the integrity of the products during the stated internal shipment and/or the external delivery process to allow a modification, cloning or the retrieval of confidential information after further production steps.

* 1. Organizational Security Policies

The following policies are introduced by the requirements of the assurance components of ALC for the assurance level EAL5+. The chosen policies shall support the understanding of the production flow and the security measures of the site. In addition, they shall allow an appropriate mapping to the Security Assurance Requirements (SAR).

The evaluation of the documentation of the site is under configuration management. This comprises all procedures regarding the evaluated test and assembly flows and the security measures that are in the scope of the evaluation.

**P.Config-Items**

The configuration management system shall be able to uniquely identify configuration items. This includes the unique identification of items that are created, generated, developed or used at the site as well as the received and transferred and/or provided items.

The configuration management relies completely on the naming and identification of the received configuration items. The consistency with the expected identification is verified after receipt and each item is assigned to an internal unique identification. This holds also for test programs and other items that are provided to the site for local use. For configuration items that are created, generated or developed at the site the naming and identification must be specified.

**P.Config-Control**

The procedures for setting up the production process for a new product as well as the procedure that allows changes of the initial setup for a product shall only be applied by authorized personnel. Automated systems shall support the configuration management and ensure access control or interactive acceptance measures for set up and changes. The procedure for the initial set up of a production process ensures that sufficient information is provided by the client.

The product setup includes the following information: (i) identification of the product, (ii) properties of the product when received at the site, (iii) properties of the product when internally shipped, (iv) how the product is tested after assembly, (v) any configuration of the processed item as part of the services provided by the site, (vi) which address is used for the internal shipment.

**P.Config-Process**

The services and/or processes provided by the site are controlled in the configuration management plan. This comprises tools used for the development and production of the product, the management of flaws and optimizations of the process flow as well as the documentation that describes the services and/or processes provided by the site.

The documentation with the process descriptions and the security measures of the site are under version control. Measure are in place to ensure that the evaluated status is ensured. In most cases tools are used to support the processes at the site. This comprises e.g. scripts, programs or batch routines developed by the site and some production data process system. This comprises also service levels and quality parameters.

**P.Reception-Control**

The inspection of incoming items done at the site ensures that the received configuration items comply with the properties stated by the client. Furthermore, it is verified that the product can be identified, and a released production process is defined for the product. This aspect includes the check that all required information and data is available to process the items.

**P.Accept-Product**

The testing and quality control of the site ensures that the released products comply with the specification agreed with the client. The acceptance process is supported by automated measures. Records are generated for acceptance process of the configuration items. Thereby, it is ensured that the properties of the product are ensured when internally shipped.

**P.Zero-Balance**

The site ensures that all sensitive items (security relevant parts of the TOEs of different clients) are separated and traced on the chip basis. According to the released production process, the defect assets are sent back to the client.

The following policy covers the packing and handover of products at the site after the applied production flow. All finished products are returned to the clients that provided the items or sending to the specific locations requested by the clients. This is considered as internal shipment to the client.

**P.Product-Transport**

Technical and organisational measures shall ensure the correct labelling of the product. A controlled internal shipment and/or the external delivery shall be applied. The transport supports traceability up to the acceptor. If applicable or required this policy shall include measures for packing if required to protect the future TOE during transport.

* 1. Assumptions

Each site operating in a production flow must rely on preconditions provided by the previous site. Each site has to rely on the information received by the previous site/client. This is reflected by the assumptions that must be defined for the interface.

The processing at CTWY relies on the following assumptions related to the products, the data, the documentation and the transfer information provided by the client or the product supplier.

**A.Item-Identification**

Each configuration item received in the site, by the client, is appropriately labelled to ensure the identification of the configuration items.

**A.Prod-Release**

The client is responsible for the release of the products to be produced.

**A.Prod-Specification**

The product developer must provide appropriate specification and guidance for the assembly and testing of the product. This comprises bond plan for an appropriate assembly process as well as test requirements and test parameters for the development of the functional tests or a finished test program appropriate for the final testing. The provided information includes the classification of the delivered items, documents and data.

**A.External-Delivery**

The recipient (consumer) of the product is identified by the address provided by the client. The address of the consumer is part of the product setup. Alternatively, deliveries to the client (Card Issuer) or other Smart Card Production facilities are possible. Every recipient of the product is identified by the address provided by the client.

**A.Internal-Shipment**

The recipient of the product is defined by the client. The client provides the address and shipping information (time cost) via secure channel to CTWY. The client may define the requirements for packing of the security products in case the standard procedure of CTWY is not applicable.

**A.Product-Integrity**

The self-protecting features of the chip are fully operational, and it is not possible to influence the configuration and behavior of the chips based on insufficient operational condition or nay command sequence generated by an attacker or by accident.

CTWY assumes that the features used for testing of the dice at the end of the life-cycle phase 3 and 4 (according to (1)) are disabled. CTWY will be provided with the configuration of the product that will be the basis of the protection if the internal shipment.

**A.Destruct-Scrap**

Scrap configuration items are collected at the site and recycled by the client so that they are useless for an attacker.

The assumptions are outside the scope of influence of CTWY. They are needed to provide the basis for an appropriate production process, to assign the product to the released production process and to ensure the proper handling and storage of all configuration items related to the intended TOE.

1. Security Objectives

The Security Objectives are related to physical, technical and organizational security measures, the configuration management as well as the internal shipment.

**O.Security-Documentation**

The security of the site is maintained according to the site’s security documentation covering all physical and logical measures to ensure the security of the site.

**O.Physical-Access**

The combination of physical partitioning between the different access control levels together with technical and organizational security measures allows a sufficient separation of employees to enforce the “need to know” principle. The access control shall support the limitation for the access to these areas including the identification and rejection of unauthorized people. The site enforces three levels (level 1 to level 3) of physical access control rights, which are mapping to the controlled areas, security areas and high-security areas of the site. The access control measures ensure that only registered employees and vendors can access restricted areas. Sensitive products are handled in restricted areas only.

**O.Security-Control**

Assigned personnel of the site or guards operate the systems for access control and surveillance and respond to alarms. Technical security measures like video control, motion sensors and similar kind of sensors support the enforcement of the access control. These personnel are also responsible for registering and ensuring escort of visitors, contractors and suppliers.

**O.Alarm-Response**

The technical and organizational security measures ensure that an alarm is generated before an unauthorized person gets access to any sensitive configuration items (asset). After the alarm is triggered, the unauthorized person still must overcome further security measures. The reaction time of the employees or guards is short enough to prevent a successful attack.

**O.Internal-Monitor**

The site performs security management meetings annually. The security management meetings are used to review security incidences, to verify that maintenance measures are applied and to reconsider the assessment of risks and security measures. Furthermore, an internal audit is performed every year to control the application of the security measures. Sensitive processes maybe controlled within a shorter period to ensure a sufficient protection.

**O.Maintain-Security**

Technical security measures are maintained regularly to ensure correct operation. The logging of sensitive systems is checked regularly. This comprises the access control system to ensure that only authorized employees have access to sensitive areas as well as computer/network systems to ensure that they are configured as required to ensure the protection of the networks and computer systems.

**O.Logical-Access**

Access to the production machines operation and related systems (ERP) is restricted to authorize employees that work in the related area or that are involved in the configuration tasks or the production systems. Every user of an IT system has its own user account and password. Authentication using user account and password is enforced by all computer systems.

**O.Logical-Operation**

All network segments and the computer systems are kept up-to-date (software up-dates, security patches and virus protection). The backup of sensitive data and security relevant logs is applied according to the classification of the stored data.

**O.Config-Items**

The site has a configuration management system that assigns a unique internal identification to each product to uniquely identify configuration items and allow an assignment to the client. In addition, the internal procedures and guidance are covered by the configuration management.

**O.Config-Control**

The site applies a release procedure for the setup of the production process for each new product. In addition, the site has a process to classify and introduce changes for services and/or processes of released products. A designated team is responsible for integration of new products or changes into the configuration management system.

**O.Config-Process**

The site controls its services and/or processes using a configuration management plan. The configuration management is controlled by tools and procedures for the production of the product, for the management of flaws and optimizations of the process flow as well as for the documentation that describes the services and/or processes provided by the site.

**O.Acceptance-Test**

The site delivers configuration items that fulfil the specified properties. Parameter checks, functional and/or visual checks and tests as specified by the clients are performed to ensure the compliance with the specification. The test results are logged to support tracing and the identification of systematic failures.

**O.Staff-Engagement**

All employees who have access to TOE parts and who can move parts of the product out of the defined production flow are checked regarding security concerns and must sign a non-disclosure agreement. Furthermore, all employees are trained and qualified for their job.

**O.Zero-Balance**

The site ensures that all sensitive products (intended TOE of different clients) are separated and traced on a chip basis. Automated control and/or two employee’s acknowledgements during hand over is applied for functional and defective chips. According to the agreed production flow, the defect chips are sent back to the client. All the production stages of sensitive product are managed though ERP system automatically, the quantity of the TOE and defective products is recorded in the ERP system and ensure that all the sensitive materials are under sufficiently control.

**O.Reception-Control**

Upon reception of a product an immediate incoming inspection is performed. The inspection of physical products is done according to the internal requirements. It comprises the surface of raw materials, received number of products, the identification and assignment of the product to a related internal production process. For security, relevant integrity and availability is verified upon reception.

**O.Internal-Shipment**

The recipient of a physical configuration item is identified by the assigned client address. The internal shipment procedure is applied to the configuration item as specified by the client. The address for shipment can only be changed by a controlled process. The packaging is part of the defined process and applied as specified by the client or supplier. The forwarder supports the tracing of configuration items during internal shipment. For every sensitive configuration item, the protection measures against manipulation are defined. Measures are in place to guarantee the internal shipments with equivalent measures compared to external deliveries.

**O.External-Delivery**

The recipient of a physical configuration item is identified by the assigned consumer address. The recipient(s) of an electronic configuration item (e.g. initialisation data, response data) can be identified in different ways. The specific way is defined in the external delivery procedure. The external delivery procedure is applied to all sensitive configuration data or items. The recipient for shipment can only be changed by a controlled process. The packaging (if any) is also part of the defined process and applied as agreed with the client or the consumer. The forwarder supports the tracing of sensitive configuration data or items during external delivery. For every configuration data or item, the protection measures against manipulation are defined (if necessary).

**O.Transfer-Data**

Sensitive electronic configuration items (data or documents in electronic form) are protected by applying cryptographic algorithms to ensure confidentiality and/or integrity (whatever is required) during internal shipment and external delivery. In case asymmetric cryptographic algorithms are applied, the associated cryptographic keys must be assigned to individuals to ensure that only authorised employees are able to extract the sensitive electronic configuration items. Alternatively, symmetric key or password-based exchanges methods might be used (e.g. symmetric key encrypted files, password encrypted archives) which don't allow assignment of individuals. In the latter case it has to be ensured that only authorised users have access to the cryptographic keys or passwords. The cryptographic keys and/or passwords are exchanged based on secure measures and they are sufficiently protected.

**O.Control-Scrap**

The site has measures in place to destroy sensitive documentation and erase electronic media so that they do not support an attack. The defective and rejected products are collected and returned back to the client.

* 1. Security Objectives Rationale

The SST includes a Security Objectives Rationale with a map, which shows how the threats and OSPs are covered by the Security Objectives.

Note that the assumptions defined in this Site Security Target cannot be used to cover any threat or OSP of the site. They are seen as preconditions fulfilled either by the site providing the sensitive configuration items or by the site receiving the sensitive configuration items. Therefore, they do not contribute to the security of the site under evaluation.

* + 1. Mapping of Security Objectives

|  |  |  |
| --- | --- | --- |
| Threats and OSP | Security Objective | Note |
| T.Smart-Theft | O.Security-Documentation  O.Physical-Access  O.Security-Control  O.Alarm-Response  O.Internal-Monitor  O.Maintain-Security | The combination of structural, technical and organizational measures detects unauthorized access and allow for appropriate response on any threat. |
| T.Rugged-Theft | O.Security-Documentation  O.Physical-Access  O.Security-Control  O.Alarm-Response  O.Internal-Monitor  O.Maintain-Security | The combination of structural, technical and organizational measures detects unauthorized access and allow for appropriate response on any threats. |
| T.Computer-Net | O.Security-Documentation  O.Internal-Monitor  O.Maintain-Security  O.Logical-Access  O.Logical-Operation  O.Staff-Engagement | The automated measures and the control and verification procedures avoid accidental changes of sensitive items. |
| T.Accidental-Change | O.Acceptance-Test  O.Config-Items  O.Config-Process  O.Logical-Access  O.Physical-Access  O.Staff-Engagement  O.Zero-Balance | Physical and logical access control limits the access to sensitive data to authorized persons. In addition, organizational measures prevent uncontrolled access to products or product related items. |
| T.Unauthorised-Staff | O.Alarm-Response  O.Control-Scrap  O.Internal-Monitor  O.Logical-Access  O.Logical-Operation  O.Maintain-Security  O.Physical-Access  O.Security-Control  O.Staff-Engagement  O.Zero-Balance | The application of internal security measures combined with the hiring policies that restrict hiring to trustworthy employees prevent unauthorized access to the sensitive data or items. |
| T.Staff-Collusion | O.Security-Documentation  O.Internal-Monitor  O.Maintain-Security  O.Staff-Engagement  O.Transfer-Data  O.Control-Scrap | The applied security measures on sensitive data during internal shipment and external delivery prevent modification or disclosure of any sensitive data during transport. The applied security measures on physical items during internal shipment and external delivery allow detection of attempted attacks. |
| T.Attack-Transport | O.Internal-Shipment  O.External-Delivery  O.Transfer-Data | The combination of structural, technical and organizational measures detects unauthorized access and allow for appropriate response on any threats. |
| P.Accept-Product | O.Acceptance-Test  O.Config-Control  O.Config-Process | On request of the client release tests are performed. |
| P.Config-Control | O.Config-Items  O.Config-Control  O.Logical-Access  O.Reception-Control  O.Config-Process | The scope of the configuration control comprises the production process. |
| P.Config-Items | O.Config-Items  O.Reception-Control | All relevant items are covered by the control. |
| P.Config-Process | O.Config-Process | The scope of the configuration control comprises the production process. |
| P.Organise-Product | O.Logical-Operation  O.Logical-Access  O.Config-Control  O.Config-Process | The application of the production processes is ensured by O.Organise-Product supported by technical and organisational means. |
| P.Product-Transport | O.Config-Items  O.Internal-Shipment  O.External-Delivery  O.Transfer-Data | The controlled shipment and delivery procedures ensure correct shipment and delivery of items. |
| P.Reception-Control | O.Reception-Control | The incoming control on physical items ensures that only authentic items of correct quantity are accepted.  The incoming control on integrity and availability ensures that only authentic and qualified items are accepted. |
| P.Zero-Balance | O.Control-Scrap  O.Internal-Monitor  O.Staff-Engagement  O.Zero-Balance | The handling of correct and defective items ensures that no unexpected missing items or left-over items occur. |

Table 1 Mapping of Security Objectives

The following is a table that demonstrates full coverage of Threats being countered and that all Organizational Security Policies are at least enforced by one or more Security Objective of the site.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | O.Acceptance-Test | O.Alarm-Response | O.Config-Control | O.Config-Items | O.Config-Process | O.Control-Scrap | O.External-delivery | O.Internal-Monitor | O.Internal-Shipment | O.Logical-Access | O.Logical-Operation | O.Maintain-Security | O.Physical-Access | O.Reception-Control | O.Security-Control | O.Security-Documentation | O.Staff-Engagement | O.Transfer-Data | O.Zero-Balance |
| P.Accept-Product |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| P.Config-Control |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| P.Config-Items |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| P.Config-Process |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| P.Organise-Product |  |  |  |  | º |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| P.Product-Transport |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| P.Reception-Control |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| P.Zero-Balance |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T.Accidental-Change |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T.Attack-Transport |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T.Computer-Net |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T.Rugged-Theft |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T.Smart-Theft |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T.Staff-Collusion |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| T.Unauthorised-Staff |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Table 2 mapping between policies/threads covering objectives

* + 1. Justification of Security Objectives mapping

**T.Accidental-Change**

Objectives O.Logical-Access and O.Physical-Access contributes to a suitable environment where CM items management (defined by O.Config-Items) are protected against external or unauthorized interference.

O.Staff-Engagement ensures that staff interacting by any means with sensitive assets are well trained (O.Config-Process) and trustworthy, and by the objective of O.Zero-Balance is prevented that by mistake any asset could be leaked between clients.

Before delivering the assets, O.Acceptance-Test guarantees that the delivery meets the required criteria imposed by the client.

**T.Attack-Transport**

The security measures defined by O.Internal-Shipment and O.External-Delivery ensure that an attacker cannot get access to sensitive physical or electronic data or items during internal or external shipment. For electronic items this is supported by the security measures defined by O.Transfer-Data.

Therefore the combination of O.Internal-Shipment, O.External-Delivery and O.Transfer-Data is sufficient to cover T.Attack-Transport.

**T.Computer-Net**

O.Security-Documentation specifies all security measures of the site and is therefore the very basis to counter all attacks to the assets of the site.

The logical security measures defined by O.Logical-Access prevent an attacker from unauthorised remote access to sensitive data. The measures defined by O.Logical-Operation ensure that the IT systems are kept up-to-date and by this ensure that the security measures defined by O.Logical-Access continuously provide a sufficient security level. This is supported by O.Internal-Monitor and O.Maintain-Security.

The measures defined by O.Staff-Engagement ensure that staff with access to sensitive items has the required skills not to compromise the security measures established at the site.

Therefore the combination of O.Security-Documentation, O.Logical-Access, O.Logical-Operation, O.Internal-Monitor, O.Maintain-Security and O.Staff-Engagement are sufficient to cover T.Computer-Net.

**T.Smart-Theft and T.Rugged-Theft**

O.Security-Documentation specifies all security measures of the site and is therefore the very basis to counter all attacks to the assets of the site.

The site is protected with the measures defined by O.Physical-Access preventing the intruder access to the facilities. Procedures and measures defined by O.Security-Control ensures the correct operation of mechanism supporting the physical security.

O.Internal-Monitor defines the periodic review of suitability of the current protection mechanisms and its correct implementation and execution and O.Maintain-Security defines the checks to ensure the integrity of the security mechanisms.

O.Alarm-Response ensures that in the event of an intrusion, the intruder will not have time to complete the attack without triggering the response for mitigation of the attack.

Therefore the combination of O.Security-Documentation, O.Physical-Access, O.Security-Control, O.Alarm-Response, O.Internal-Monitor and O.Maintain-Security are sufficient to cover T.Smart-Theft

**T.Staff-Collusion**

O.Security-Documentation specifies all security measures of the site and is therefore the very basis to counter all attacks to the assets of the site.

The measures defined by O.Staff-Engagement ensure that staff with access to sensitive items has the required skills not to compromise the security measures established at the site and to understand the risk of supporting an external attacker.

It is ensured that the security level of the site is maintained at all times by the security measures defined in O.Internal-Monitor and O.Maintain-Security including background checks during hiring of personnel and defined exit procedures for dismissed employees (e.g. deactivation of accounts).

O.Transfer-Data ensures the security of sensitive data during transfer.

The security measures defined by O.Control-Scrap ensure that an attacker cannot get access to sensitive data when they are no longer required at the site.

Therefore the combination of O.Security-Documentation, O.Internal-Monitor, O.Maintain-Security, O.Staff-Engagement, O.Transfer-Data and O.Control-Scrap are sufficient to cover T.Staff-Collusion.

**T.Unauthorized-Staff**

By measures defined by O.Logical-Access and O.Physical-Access, non-authorized staff can’t access any asset. Measures are kept operative by measures defined O.Security-Control, O.Logical-Operation and O.Internal-Monitor while its effectiveness is evaluated periodically by means of O.Maintain-Security.

Intruders attempting unauthorized access to any asset will be advertised by measures as defined in O.Alarm-Response.

Staff attempting (deliberately or by mistake) access to assets for which no authorization is granted will be detected before the access by O.Internal-Monitor, or prevented by measures defined in O.Zero-Balance. Cooperation of other staff members could be necessary and is enforced by O.Staff-Engagement.

Rejected assets will be collected before leaving the facilities where the access is controlled and returned to the client, by measures defined in O.Control-Scrap.

**P.Accept-Product**

Objectives defined to accomplish with O.Acceptance-Test directly enforces the policy for which the products are released only when criteria defined by client is satisfied.

Both O.Config-Items and O.Config-Process contributes to the acceptance checks framework necessary to accomplish with the policy.

**P.Config-Control**

Objective O.Config-Control directly enforces the policy as all the processes are explicitly tailored on that purpose. The enforcement of P.Config-Control is supported by measures and procedures defined to satisfy with O.Config-Items, O.Config-Process and O.Logical-Access.

**P.Config-Items**

Objective O.Config-Items directly enforces the policy as all the processes are explicitly tailored on that purpose. The enforcement of P.Config-Items is supported by procedures defined to satisfy O.Reception-Control.

**P.Config-Process**

All services definition, procedures and internal relevant documentation are managed by a CM system and following a CM plan. This is part of the procedures and measures defined to satisfy O.Config-Process that directly enforces P.Config-Process.

**P.Organise-Product**

This is supported by O.Config-Process, which ensures that a configuration management plan is in place, and by O.Config-Control, which ensures the application of the required procedures for the product release. The security objectives O.Logical-Access and O.Logical-Operation provide the necessary security measures to protect sensitive items.

**P.Product-Transport**

P.Product-Transport is directly enforced by O.Internal-Shipment for internal shipments and O.External-Delivery for external shipments and O.Transfer-Data for transfer of sensitive electronic configuration items. This enforcement is supported by O.Config-Items which ensures the correct labelling of the product.

**P.Reception-Control**

Procedures defined to satisfy O.Reception-Control directly enforces the P.Reception-Control policy.

**P.Zero-Balance**

P.Zero-Balance is enforced by O.Zero-Balance and O.Control-Scrap which ensures that no unexpected missing or left-over items occur.

1. Extended Assurance Components Definition

No extended components are defined in this Site Security Target.

1. Security Assurance Requirements

The security assurance requirements for this Site Security Target are ALC\_CMC.4, ALC\_CMS.5, ALC\_DVS.2 and ALC\_LCD.1.

The Security Assurance Requirements (SAR) for the Class ALC (Life-cycle support) are:

* ALC\_CMC.4 (CM capabilities)
* ALC\_CMS.5 (CM scope)
* ALC\_DVS.2 (Development security)
* ALC\_LCD.1 (Life-cycle definition)

The assurance requirements listed above fulfil the requirements of (5) because hierarchically higher components are used in this Site Security Target compared to the Minimum Requirements in (6).

The dependencies for the assurance requirements named above are as follows:

ALC\_CMC.4: ALC\_CMS.1, ALC\_DVS.2, ALC\_LCD.1

ALC\_CMS.5: None

ALC\_DVS.2: None

ALC\_LCD.1: None

The following dependencies are not fulfilled or not completely fulfilled:

ALC\_LCD.1: ALC\_LCD.1 is part of this Site Security Target but doesn't cover product specific information of the life-cycle definition.

* 1. Application Notes and Refinements

The term "TOE" used for the product under evaluation is considered as "intended TOE" here because a specific product is not considered during the evaluation. Since the term “TOE” is not applicable in the SST the associated processes for the handling of products are in the focus and described in this SST. These processes are subject of the evaluation of the site.

Refinements regarding Security Assurance Requirements as defined in CC Part 3 (3) are written in italic. The term 'TOE' is replaced by 'product' or 'configuration item'.

* + 1. Overview regarding CM capabilities (ALC\_CMC)

A production control system is employed to guarantee the traceability and completeness of different production charges or lots. The chip lots, production serial number, client part ID, production quantity, defective products quantity, operators, production progress, serial number of production machines, working time of operators, usage of raw materials, etc. is tracked by this system. Appropriate administration procedures are implemented for managing wafers, dice and/or packaged products, which are being removed from the production-process in order to verify and to control predefined quality standards and production parameters. It is ensured, that wafers, dice or assembled chip removed from the production stage are returned to the production stage from where removed or are securely stored.

The configuration control and a defined change process for the procedures and descriptions of the site under evaluation are mandatory. The control process must include all procedures that have an impact on the evaluated production processes as well as on the site security measures.

The life-cycle described in (1) is a complex production process. Only parts of this production process are normally provided at a specific site. In such a case the control of the product during such a production process must include sufficient verification steps to ensure the specified and expected result. Test procedures, verification procedures and the associated expected results must be under configuration management for these cases.

The configuration items for the considered product type are listed in section 4.1. The CM documentation of the site must be able to maintain the items listed for the relevant life-cycle step and the CM system must be able to track the configuration items.

A CM system has to be employed to guarantee the traceability and completeness of different production charges or lots. Appropriate administration procedures have to be provided in order to maintain the integrity and confidentiality of the configuration items.

* + 1. Overview regarding CM Scope (ALC\_CMS)

The scope of the configuration list for a site certification process is limited to the documentation relevant for the SAR for the claimed life-cycle SAR and the configuration items handled at the site.

Process control data, test data and related procedures and programs can be in the scope of the configuration management.

* + 1. Overview regarding Development Security (ALC\_DVS)

The CC assurance components of family ALC\_DVS refer to the “development environment”, to the “TOE” or “TOE design and implementation”. The component ALC\_DVS.2 “Sufficiency of security measures” requires additional evidence for the suitability of the security measures.

The TOE Manufacturer must ensure that the development and production of the TOE is secure so that no information is unintentionally made available for the operational phase of the TOE. The confidentiality and integrity of design information, test data and configuration data must be guaranteed, access to any kind of samples (client’s specific samples or open samples) development tools and other material must be restricted to authorized persons only, and scrap must be controlled and returned.

Based on these requirements the physical security as well as the logical security of the site are in the focus of the evaluation. Beside the pure implementation of the security measures, also the control and the maintenance of the security measures must be considered.

If the transfer of configuration items between two sites involved in the production flow is included in the scope of the evaluation (life-cycle covered by the product evaluation) this is considered as internal shipment. In general, the security requirements for confidentiality and integrity are the same but it must clearly distinguish to ensure the correct subject of the evaluation.

* + 1. Overview regarding Life-Cycle Definition (ALC\_LCD)

The site is not equal to the entire development environment. Therefore, the ALC\_LCD criteria are interpreted in a way that only those life-cycle phases have to be evaluated which are in the scope of the site. The PP (1) provides a life-cycle description there, specific life-cycles steps can be assigned to the tasks at site. This may comprise a change of the life-cycle state if e.g. testing or initialization is performed at the site or not.

The PP (1) does not include any refinements for ALC\_LCD. The site under evaluation does not initiate a life-cycle change of the intended TOE. The products are assembled and delivered to the client. The defective products are also returned to the client.

For this site the Life Cycle only the phase 'IC Packaging' is relevant.

* 1. Security Assurance Rationale

The security assurance requirements rationale maps the content elements of the selected assurance components of [2] to the security objectives defined in this Site Security Target. The refinements described above are considered.

The site has a process in place to ensure an appropriate and consistent identification of the products.

Note: The content elements that are changed from the original (4) according to the application notes in the process description (3) are written in italic. The term TOE can be replaced by configuration items or product.

* + 1. Rationale for ALC\_CMC.4

|  |  |  |
| --- | --- | --- |
| SAR | Security Objective | Rationale |
| **ALC\_CMC.4.1C**  *The CM documentation shall show that a process is in place to ensure an appropriate and consistent labelling.* | O. Config-Items | All products assembled at CTWY get a unique production serial number generated by a database as defined by O.Config-Items, which is linked to the client part ID. |
| **ALC\_CMC.4.2C**  The CM documentation shall describe the method used to uniquely identify the configuration items. | O.Reception-Control  O.Config-Items  O.Config-Control  O.Config-Process | Incoming inspection are based on O.Reception-Control product identification that ensures associated labelling.  Labelling is mapped to the internal identification as defined by O.Config-Items. This ensures the unique identification of security products.  O.Config-Control ensures that each client part ID is released based on a defined process. This includes changes that are related to a client part ID. The configurations can only be done by authorized person.  O.Config-Process provides a configured and controlled production process. |
| **ALC\_CMC.4.3C**  The CM system shall uniquely identify all configuration items. | O.Reception-Control  O.Config-Items  O.Config-Control | O.Reception-Control includes the incoming labelling and the mapping to internal identifications.  O.Config-Items includes the internal unique identification of all items that belongs to a client part ID.  O.Config-Control ensures the assignment between all configuration items supported by automated tracking systems. |
| **ALC\_CMC.4.4C**  The CM system shall provide automated measures such that only authorised changes are made to the configuration items. | O.Config-Control  O.Config-Process  O.Logical-Access  O.Logical-Operation | According to O.Config-Control an automated system is in place to map the configuration items to a unique job number  Changes can only be applied by authorised personal as described by O.Config-Process.  O.Logical-Access and O.Logical-Operation support the control by limiting the access and ensuring the correct operations for all tasks to the authorized staff. |
| **ALC\_CMC.4.5C**  The CM system shall support the production of the TOE by automated means. | O.Config-Control  O.Zero-Balance | O.Config-Control comprises an automated system that ensures the unique mapping between configuration items and the tracking of the different production steps.  O.Zero-Balance ensures that the number of produces modules complies with the sum of the delivered modules and the scrap modules. |
| **ALC\_CMC.4.6C**  The CM documentation shall include a CM plan | O.Config-Control  O.Control-Process | According to O.Config-Control, the setup of each client part ID includes an associated CM plan including the release.  O.Config-Process ensures the reliability of the processes and tools based on dedicated CM plans. |
| **ALC\_CMC.4.7C**  The CM plan shall describe how the CM system is used for the development of the TOE. | not applicable | The site receives no implementation representation. For this reason, it is not allowed to separate or to identify any parts that comprise TSF. |
| **ALC\_CMC.4.8C**  The CM plan shall describe the procedures used to accept modified or newly created configuration items as part of the TOE. | O.Reception-Control  O.Config-Items  O.Config-Control  O.Config-Process | O.Reception-Control supports the identification of configuration items at CTWY.  O.Config-Items ensures the unique identification of each product tested at CTWY by the client part ID.  O.Config-Process ensures the automated control of released products.  O.Config-Process ensures the automated control of released products. |
| **ALC\_CMC.4.9C**  The evidence shall demonstrate that all configuration items are being maintained under the CM system. | O.Reception-Control  O.Config-Control  O.Config-Process  O.Zero-Balance  O.Internal-Shipment | The objectives O.Reception-Control, O.Config-Control, O.Config-Process ensure that only released client part IDs are produced.  This is supported by O.Zero-Balance ensuring the tracing of all security products.  O.Internal-Shipment includes the packing requirements, the reports, logs and notification including the required evidence. |
| **ALC\_CMC.4.10C**  The evidence shall demonstrate that the CM system is being operated in  accordance with the CM plan*.* | O.Config-Control  O.Config-Process  O.Acceptance-Test  O.Internal-Shipment | O.Config-Control includes a release procedure as evidence.  O.Config-Process ensures the compliance of the process.  O.Acceptance-Test comprises the control that all finished parts ID. Since the finished products are returned to the client according to O.Internal-Shipment at least the labelling of controlled by the client. |

Table 3 rationale for ALC\_CMC.4

* + 1. Rationale for ALC\_CMS.5

|  |  |  |
| --- | --- | --- |
| SAR | Security Objective | Rationale |
| **ALC\_CMS.5.1C**  The configuration list shall include the following: the *product* itself; the evaluation evidence required by the SARs; the parts that comprise the *product*; the implementation representation; security flaw reports and resolution status; and development tools and related information. | O.Config-Items  O.Config-Control  O.Config-Process | Since the process is subject of the evaluation, no products are part of the configuration list.  O.Config-Items ensure unique part IDs including a list of all items and processes for this part.  O.Config-Control describes the release process for each client part ID.  O.Config-Process defined the configuration control including part IDs. Procedures and processes. |
| **ALC\_CMS.5.2C**  The configuration list shall uniquely identify the configuration items. | O.Config-Items  O.Config-Control  O.Config-Process  O.Reception-Control  O.Internal-Shippment | Items, products and processes are uniquely identified by the data base system according to O.Config-Items.  Within the production process the unique identification is supported by automated tools according to O.Config-Control and O.Config-Process.  The identification of received products is defined by O.Reception-Control.  The labelling and preparation for the transport is defined by O.Internal-Shippment. |
| **ALC\_CMS.5.3C**  For each relevant configuration item, the configuration list shall indicate the developer/*subcontractor* of the item. | O.Config-Items | CTWY does not involve subcontractors for the test of security products. According to O.Config-Items all configuration items for secure products are identified. |

Table 4 TBD

* + 1. Rationale for ALC\_DVS.2

|  |  |  |
| --- | --- | --- |
| SAR | Security Objective | Rationale |
| **ALC\_DVS.2.1C**  The development security documentation shall describe all the physical, procedural, personnel, and other security measures that are necessary to protect the confidentiality and integrity of the *product* design and implementation in its development environment. | O.Physical-Access  O.Security-Control  O.Alarm-Response  O.Logical-Access  O.Logical-Operation  O.Staff-Engagement  O.Maintain-Security  O.Control-Scrap | The physical protection is provided by O.Physical-Access, supported by O.Security-Control, O.Alarm-Response, and O.Maintain-Security.  The logical protection of data and the configuration management is provided by O.Logical-Access and O.Logical-Operation.  The personnel security measures are provided by O.Staff-Engagement.  Any scrap that may support an aggressor is controlled according to O.Control-Scrap. |
| **ALC\_DVS.2.2C**  The development security documentation shall justify that the security measures provide the necessary level of protection to maintain the confidentiality and integrity of the *product*. | O.Physical-Access  O.Security-Control  O.Alarm-Response  O.Logical-Access  O.Staff-Engagement  O.Control-Scrap  O.Internal-Monitor  O.Zero-Balance  O.Acceptance-Test  O.Reception-Control  O.Internal-Shipment | The security measures described above under ALC\_DVS.2.1C and ALC\_DVS.2.3C are commonly regarded as effective protection if they are correctly implemented and enforced. The associated control and continuous justification are subject of the objectives as there is not necessarily a TOE evaluation running the evidence needed may be taken previous TOE/product developments. The evaluator should get evidence that the security measures stated in the development documentation are followed can be achieved while performing a site visit which is handled by ALC\_DVS.2.2E. |
| **ALC\_DVS.2.3C** | Not applicable | Not applicable due to (7),chapter 3. |

Table 5 rationale for alc\_cms.5

* + 1. Rationale for ALC\_LCD.1

|  |  |  |
| --- | --- | --- |
| SAR | Security Objective | Rationale |
| **ALC\_LCD.1.1C**  The life-cycle definition documentation shall describe the model used to development and maintain the *product*. | O.Config-Control  O.Config-Process | The process used for identification and manufacturing are covered by O.Config-Control and O.Config-Process. |
| **ALC\_LCD.1.2C**  The life-cycle model shall provide for the necessary control over the development and maintenance of the *product*. | O.Acceptance-Test  O.Config-Process  O.Zero-Balance | The site does not perform development tasks. The applied production process is controlled according to O.Config-Process, the finished client parts are tested according to O.Acceptance-Test and all security products are traced according to O.Zero-Balance. |

Table 6 rationale for alc\_lcd.1

1. Site Summary Specification
   1. Preconditions Required by the Site

The main precondition of the design data preparation and the modules production is a released process technology between the wafer fab and the final client. This comprises the definition of the requirements specification as well as parameters and limits for the produced wafer. The requirement specification is independent of the product classification and fixed for a dedicated production process.

CTWY provides assembly services for IC smart cards into rails. The sawn wafers and lead frames are acceptable as input for the assembly lines. Defect dice on the wafer can be marked by inking. The packing and the wafers must be labelled before delivery to the client to allow the product identification.

CTWY will conduct the finished product testing after the assembly using simple functional tests like the checking of the ATR as well as open and short measurements based on the test parameters provided by the client.

If specific requirements are needed for the transport of the finished products, the related specifications and further items e.g. anti-tamper labels must be provided to client.

* 1. Services of the Site

Reception, identification, registration and storage of sawn wafers: The chip of products received by CTWY will be labelled with a unique client part ID (client parts). This part ID is linked with the chip that is assembled in the product.

Die bounding and Wire bounding: The processes for assembly, testing and acceptance are set up at CTWY according to the specification (e.g. bond plan, module specification, test specification and packing requirements if applicable) provided by the client. For the release a sample lot is produced at the site.

Quality control testing for the incoming raw materials and each production process: There is a quality control procedure be presented used to inspect the incoming materials and the product under production at each production process.

Functional testing and visual inspection of finished modules: The complete product specific flow includes a functional test of each product as part of the acceptance process. The functional testing program is developed by CTWY based on test specification and electrical parameters/limits provided by the client. The testing program is integrated in the test environment of CTWY. No sensitive information should be included in those test specifications.

Warehousing and dispatch of finished modules: CTWY has a standard procedure for packing of finished products and preparation of shipment. If special packing requirements are provided by the client, they are included in the process setup. The client is alerted if products are ready for transport because the transport time cost must be organized by the client. Based on the alert the client will be provided the information such as the shipment details and express tracking number that is used for the verification while the reception of the products.

Scrap recycle and return to clients: Both the defective or rejected products and chips are returned to the client.

* 1. Objectives Rationale

The following rationale provides a justification that shows that all threats and organisational security policies are effectively addressed by the security objectives.

The following table shows which security objectives cover which threats and OSPs.

|  |  |
| --- | --- |
| 1. **Security Objective** | 1. **Threats and OSPs** |
| O.Accept-Product | P.Accept-Product, T.Accident-Change, |
| O.Alarm-Response | T.Rugged-Theft, T.Smart-Theft, T.Unauthorised-Staff |
| O.Config-Control | P.Config-Control, P.Organise-Product |
| O.Config-Items | P.Config-Control, P.Config-Items, P.Product-Transport, T.Accidental-Change |
| O.Config-Process | P.Accept-Product, P.Config-Control, P.Config-Process, T.Accidental-Change |
| O.Control-Scrap | P.Zero-Balance, T.Staff-Collusion, T.Unauthorised-Staff |
| O.External-delivery | P.Product-Transport, T.Attack-Transport |
| O.Internal-Monitor | P.Zero-Balance, T.Computer-Net, T.Rugged-Theft, T.Smart-Theft, T.Staff-Collusion, T.Unauthorised-Staff |
| O.Internal-Shipment | P.Product-Transport, T.Attack-Transport |
| O.Logical-Access | P.Config-Control, T.Accidental-Change, T.Computer-Net, T.Unauthorised-Staff |
| O.Logical-Operation | T.Computer-Net, T.Unauthorised-Staff |
| O.Maintain-Security | T.Computer-Net, T.Rugged-Theft, T.Smart-Theft, T.Staff-Collusion, T.Unauthorised-Staff |
| O.Physical-Access | T.Accidental-Change, T.Rugged-Theft, T.Smart-Theft, T.Unauthorised-Staff |
| O.Reception-Control | P.Config-Control, P.Config-Items, P.Reception-Control |
| O.Security-Control | T.Rugged-Theft, T.Smart-Theft, T.Unauthorised-Staff |
| O.Security-Documentation | T.Computer-Net, T.Rugged-Theft, T.Smart-Theft, T.Staff-Collusion |
| O.Staff-Engagement | P.Zero-Balance, T.Accidental-Change, T.Computer-Net, T.Staff-Collusion, T.Unauthorised-Staff |
| O.Transfer-Data | T.Attack-Transport, T.Staff-Collusion |
| O.Zero-Balance | P.Zero-Balance, T.Accidental-Change, T.Unauthorised-Staff |

Table 7 objectives rationale

O.Security-Documentation

The security of the site is maintained according to the site’s security documentation covering all physical and logical measures to ensure the security of the site.

These security measures are necessary to prevent the threats T.Smart-Theft, T.Rugged-Theft, T.Computer-Net, T.Unautorised-Staff and T.Staff-Collusion.

O.Physical-Access

The production site is operated by CTWY. The site is separated into different security levels. The production site is monitored by security staff on duty and surveillance cameras at production times.

The building can only be entered presenting a company badge or visitor's badge to the card readers at the entrance. All employees and visitors have to wear their badges visible at any time.

The access to the production area is secured by mantraps with card readers. Access to the production area requires special permissions. It is ensured by policy that either no staff is present in the production area or at least two staff members are present in the production area. If no one is present in the production area the alarm system is automatically activated. For delivery of production material and goods into and from the production area special entrance systems are used which ensures that only material can get into the production area or out from the production area, but no persons can enter or exit the area via this system.

All mantraps are monitored by surveillance cameras at all times. Opening a mantrap by force will trigger an alarm at the desk of the site’s security staff. The outer area of the building is monitored by surveillance cameras. Emergency exits are also monitored by surveillance cameras.

All access attempts at any mantrap at all locations named above will be recorded by the security staff.

Smart Card Products which are not in the process of production are stored in a specially secured area ('vault'). The main vault, which is the primary storage location, is inside the production area. Access to the main vault is controlled by card readers and special permissions for this area. It is ensured by technical means that at least 2 people are present in the area or no one is present in this area. If no one is present in the vault the alarm system is activated. Since this vault is located inside the production area which is separated from the rest of the building by dedicated mantraps, no additional mantraps are installed for this vault.

These measures prevent access to sensitive areas for any unauthorised person and therefore prevent the threats T.Smart-Theft, T.Rugged-Theft, T.Unauthorised-Staff.

O.Security-Control

Trained security staff is in charge of operating all security related systems. This especially holds granting access rights, etc. Visitors are escorted by the security staff or collected by company internal staff from the security staff.

Therefore the threats T.Smart-Theft, T.Rugged-Theft and T.Unauthorised-Staff are addressed by management of the security related systems like the access control system.

O.Alarm-Response

Several alarm and detection sensors are installed to provide a warning system for entering the premises by T.Smart-Theft, T.Rugged-Theft and T.Unauthorised-Staff. Security staff will start to investigate any alarm immediately.

O.Internal-Monitor

The security manager performs meetings with all security staff on a regular basis. During this meeting security procedures are reviewed, and corrective actions are initiated (if necessary). In case security related incident occurred since the last security meeting, they will be addressed. In addition, internal audits are performed on a regular basis to ensure the application of the security measures.

The monitoring and protection of the IT system (including network) is handled by the IT department under supervision of the security manager.

These measures prevent T.Smart-Theft, T.Rugged-Theft, T.Computer-Net, T.Unauthorised-Staff, T.Staff-Collusion.

O.Maintain-Security

All security related alarm and detection systems are checked on a regular basis. Logs for building access or site access as well as access to especially secured areas are stored and checked on a regular basis. Network security is monitored permanently by the IT-department.

These measures prevent T.Smart-Theft, T.Rugged-Theft, T.Computer-Net, T.Unauthorised-Staff, T.Staff-Collusion.

O.Logical-Access

The IT network is logically separated from the outside world by a firewall system consisting of several firewalls which ensures that only authorised connections from and to the IT network are possible. At least two firewalls (i.e. outer firewall and inner firewall) are present between the outside world and any internal network.

Each user has an individual account. To access data on the company's network every user has to authenticate himself by login name and password. Multiple successive failed authentication attempts lead to a blocked account. The number of retries depend on the authentication method.

Access rights to all network resources are set according to a need-to-know or need-to-have basis, respectively. Access rights of users who do not need access to a network share any longer (e.g. change of jobs) are revoked. In particular, all accounts of employees who leave the company are deactivated.

The production network is additionally separated from the rest of CTWY internal network.

These measures prevent T.Computer-Net and T.Unauthorised-Staff and support the OSPs P.Config-Control and P.Organise-Product.

O.Logical-Operation

Virus protection and patch management for operating systems and applications shall ensure the correct operation of the systems and prevent the systems from malfunction. They ensure that protective measures of the IT workplaces are up-to-date (virus definitions, security patches of operating system, security patches of programs, etc.). In addition, regular backups are applied to prevent loss of data. Backup tapes are securely stored protected against unauthorised modification and disclosure.

These measures prevent T.Computer-Net and T.Unauthorised-Staff and support the OSP P.Organise-Product.

O.Config-Items

All configuration items are identified by a unique version number by the configuration management system. By this different products can be identified. By this the threat T.Accident-Change is countered and the OSPs P.Config-Items, P.Config-Control and P.Product-Transport are addressed.

O.Config-Control

The application of released procedures for the setup of the production process for each product and the controlled introduction of changes ensures a production according to clients' specifications. Procedures for setting up the production process as well as changes to the initial setup are done only by authorised personnel. The production process is supported by automated systems. By this the OSPs P.Organise-Product and P.Config-Control are addressed. In addition, the threat T.Accident-Change is covered.

O.Config-Process

Configuration items are stored in the configuration management system according to the site's configuration management plan. By this the OSPs P.Config-Process and P.Organise-Product are addressed. The management of flaws and optimisations of the process flow defined by O.Config-Process encounters the threat T.Accident-Change.

O.Accept-Product

On request of the client release tests are performed for the corresponding products. By this the threat T.Accident-Change is countered and the OSP P.Accept-Product is addressed.

O.Organise-Product

The development processes are defined and applied according to the site's quality management system. By this the OSP P.Organise-Product is addressed.

O.Staff-Engagement

All employees working at the site and having access to sensitive information or data have to sign a non-disclosure agreement to provide legal liability to protect sensitive information against disclosure. In addition, all employees are trained regarding security to support the security awareness. All employees have to pass a security check before they are hired. These measures prevent T.Computer-Net, T.Unauthorised-Staff and T.Staff-Collusion.

O.Zero-Balance

Automated means and/or the application of a 4-eyes-principle ensures a continuous tracking of Smart Card Products during the whole production process. By this the OSP P.Zero-Balance is addressed and in addition, the threat T.Unauthorised-Staff is covered.

O.Reception-Control

Upon reception of an electronic item relevant to security from a different site, authenticity of this item is verified (e.g. verification of a PGP signature when sent via email). Identification is performed if necessary (i.e. requested by the client; the client has to provide information how to identify the item). In case items are shared by a shared configuration management system between different sites or shared network drives, authenticity is implicitly assumed. By this the OSPs P.Config-Items and P.Reception-Control are addressed.

O.Internal-Shipment

Security relevant physical items are internally shipped either by security transport (e.g. sealed boxes) or in person by company's internal staff. Security relevant electronic items are internally shipped using secure communication measures. This might be signed and/or encrypted emails or similar (e.g. SSL secured web portals) or shared network systems (e.g. shared configuration management system). This prevents T.Attack-Transport and covers also P.Product-Transport.

O.External-Delivery

Security relevant physical items are externally delivered either by security transport (e.g. sealed boxes), in person by company's internal staff or collected by the client or the consumer as long as the security functions of the item are not sufficient to protect itself. Security relevant electronic items are externally shipped using secure communication measures. This might be signed and/or encrypted emails or similar (e.g. SSL secured webportals). This prevents T.Attack-Transport and covers also P.Product-Transport.

O.Transfer-Data

Sensitive electronic configuration items are protected against modification and/or disclosure by cryptographic means during transfer. Either symmetric means, asymmetric means or password protection are applied (as appropriate). Cryptographic keys and password used for secure communication are sufficiently protected against unauthorised access and disclosure. This prevents T.Staff-Collusion, T.Attack-Transport and covers also P.Product-Transport.

O.Control-Scrap

At this site sensitive documentation is destroyed and electronic media is erased.

Scrap (Smart Card modules) is securely stored in a vault till end of life of the product (e.g. ePassport) in the field or securely transferred to another site of Giesecke & Devrient capable of secure destruction of scrap or securely shipped to the client for destruction. By this no employee could get uncontrolled access to scrap which might be helpful to support an attack. This prevents T.Staff-Collusion and covers P.Zero-Balance.

* 1. SAR Rationale

The Security Assurance Requirements rationale does not explicitly address the developer action elements defined in [2] because they are implicitly included in the content elements. This comprises the provision of the documentation to support the evaluation and the preparation for the site visit. In addition, this includes that the procedures are applied as written and explained in the documentation.

* + 1. ALC\_CMC

The security assurance requirements of the assurance component "ALC\_CMC.4" are suitable to support the production of complex products due to the formalized acceptance process and the automated production support. This comprises the identification of all configuration items and the automated control and tracking within an industrialized production process. The requirement for authorized changes and separate roles for operation and release support the integrity and confidentiality required for the products. Therefore, this assurance level meets the requirements for the configuration management.

* + 1. ALC\_CMS

The chosen assurance level ALC\_CMS.5 of the assurance family “CM scope” supports the control of the production and test environment. This includes product related documentation and data as well as the documentation for the configuration management and the site security measures. Since the site certification process focuses on the processes based on the absence of a concrete TOE these security assurance requirements are considered to be suitable.

* + 1. ALC\_DVS

The chosen assurance level ALC\_DVS.2 of the assurance family “Development Security” is required since a high attack potential is assumed for potential attackers. The configuration items and information handle at the site during production, assembly and testing of the product can be used by potential attackers for the development of attacks. Therefore, the handling and storage of these items must be sufficiently protected. Further on the Protection Profile (1) requires this protection for sites involved in the life-cycle of Security ICs development and production.

* + 1. ALC\_LCD

The chosen assurance level ALC\_LCD.1 of the assurance family “life-cycle definition” is suitable to support the controlled development and production process. This includes the documentation of these processes and the procedures for the configuration management. Because the site provides only a limited support of the described life-cycle for the development and production of Security ICs the focus is limited to this site. However, the assurance requirements are considered to be suitable to support the application of the site evaluation results for the evaluation of an intended TOE.

* 1. Assurance Measure Rationale

O.Acceptance-Test

ALC\_CMC.4.2C requires a CM documentation that describes the method used to uniquely identify the configuration items. ALC\_CMC.4.4C requires a unique identification of all configuration items by the CM system. ALC\_CMC.4.7C requires that the person accepting the configuration item in the CM system is not the person who developed it. ALC\_CMC.4.11C requires that the version of design data used to generate the modules can be identified. ALC\_CMC.4.14C requires the description of the procedures used to accept modified or newly created configuration items as part of the TOE. ALC\_CMS.5.2C addresses the same requirement as ALC\_CMC.4.4C. ALC\_DVS.2.2C requires security measures to protect the confidentiality and integrity of the TOE during the transfer between sites. Thereby this objective is suitable to meet the Security Assurance Requirement.

O.Alarm-Response

ALC\_DVS.2.1C requires that the developer shall describe all personnel, procedural and other security measures that are necessary to protect the confidentiality and integrity of the TOE design and implementation including the initialization in its development and production environment. Thereby this objective contributes to meet the Security Assurance Requirement.

O.Config-Control

ALC\_CMC.4.2C requires a CM documentation that describes the method used to uniquely identify the configuration items. ALC\_CMC.4.4C requires a unique identification of all configuration items by the CM system. ALC\_CMC.4.5C requires that the CM system provides automated measures so that only authorized changes are made to the configuration items. ALC\_CMC.4.6C requires the CM system to support the production of the intended TOE by automated means. ALC\_CMC.4.9C requires the support of audit information for all changes to the TOE by automated means including the originator, date and time. ALC\_CMC.4.10C requires that the system automatically identifies all configuration items that are affected by a change given to a configuration item. ALC\_CMC.4.11C requires that the version of design data and the production processes used to generate the modules can be identified. ALC\_CMC.4.12C requires a CM documentation that includes a CM plan. ALC\_CMC.4.13C requires that the CM plan describes how the CM system is used for the development of the TOE. ALC\_CMC.4.15C requests evidence demonstrating that all configuration items are being maintained under the CM system. The configuration list required by ALC\_CMS.5.1C shall include the evaluation evidence for the fulfilment of the SARs, development tools and related information. ALC\_CMS.5.2C addresses the same requirement as ALC\_CMC.4.4C. In addition, ALC\_LCD.1.1C requires that the life-cycle definition documentation describes the model used to develop and maintain the products. The objective meats the set of Security Assurance Requirements listed here.

O.Config-Items

ALC\_CMC.4.1C requires a documented process ensuring an appropriate and consistent labelling of the products. A method used to uniquely identify the configuration items is required by ALC\_CMC.4.2C. In addition, ALC\_CMC.4.4C requires that the CM system uniquely identifies all configuration items. ALC\_CMC.4.11C requires that the version of implementation representation used to generate the intended TOE can be identified. The configuration list required by ALC\_CMS.5.1C shall include the evaluation evidence for the fulfilment of the SARs, development tools and related information. ALC\_CMS.5.2C addresses the same requirement as ALC\_CMC.4.4C. The objective meets the set of Security Assurance Requirements.

O.Config-Process

ALC\_CMC.4.3C requires an adequate and appropriate review of changes to all configuration items. ALC\_CMC.4.5C requires that the CM system provides automated measures so that only authorized changes are made to the configuration items. ALC\_CMC.4.7C requires that the person or team accepting the configuration item in the CM system is not the person who developed it. ALC\_CMC.4.10C requires that the system automatically identifies all configuration items that are affected by a change given to a configuration item. ALC\_CMC.4.11C requires that the version of design data, internal procedures and processes used at the site can be identified. ALC\_CMC.4.12C requires a CM documentation that includes a CM plan. ALC\_CMC.4.13C requires that the CM plan describe how the CM system is used for the development of the TOE. ALC\_CMC.4.14C requires the description of the procedures used to accept modified or newly created configuration items as part of the TOE. The configuration list required by ALC\_CMS.5.1C shall include the evaluation evidence for the fulfilment of the SARs, development tools and related information. ALC\_CMS.5.2C addresses the same requirement as ALC\_CMC.4.4C. ALC\_LCD.1.1C requires that the life-cycle definition documentation describes the model used to develop and maintain the products. ALC\_LCD.1.2C requires control over the development and maintenance of the TOE. The objective meets the set of Security Assurance Requirements.

O.Control-Scrap

ALC\_DVS.2.1C requires that physical, procedural, personnel, and other security measures that are implemented to protect the confidentiality and integrity of the TOE design and implementation. Thereby this objective is suitable to meet the Security Assurance Requirement.

O.Internal-Monitor

ALC\_DVS.2.2C: The development security documentation shall justify that the security measures provide the necessary level of protection to maintain the confidentiality and integrity of the TOE. Thereby this objective contributes to meet the Security Assurance Requirement.

O.Internal-Shipment

ALC\_DVS.2.2C requires that the developer shall describe all physical security measures that are necessary to protect the confidentiality and integrity of the TOE during internal shipment. This includes also the protection during the transport between production sides. ALC\_CMS.5.2C requires the unique identification of the configuration item. Thereby this objective contributes to meet the Security Assurance Requirement.

O.Logical-Access

ALC\_DVS.2.1C requires that the developer shall describe all personnel, procedural and other security measures that are necessary to protect the confidentiality and integrity of the TOE design, implementation and in its development and production environment. Thereby this objective is suitable to meet the Security Assurance Requirement. ALC\_CMC.4.5C requires that the CM system provides automated measures so that only authorized changes are made to the configuration items. Thereby this objective contributes to meet the Security Assurance Requirement.

O.Logical-Operation

ALC\_DVS.2.1C requires that the developer shall describe all personnel, procedural and other security measures that are necessary to protect the confidentiality and integrity of the TOE design, implementation and in its development and production environment. Thereby this objective contributes to meet the Security Assurance Requirement. ALC\_DVS.2.2C: The development security documentation shall justify that the security measures provide the necessary level of protection to maintain the confidentiality and integrity of the TOE. Thereby this objective is suitable to meet the Security Assurance Requirement. ALC\_CMC.4.5C requires that the CM system provides automated measures so that only authorized changes are made to the configuration items. Thereby this objective contributes to meet the Security Assurance Requirement.

O.Monitor-Security

ALC\_DVS.2.2C: The development security documentation shall justify that the security measures provide the necessary level of protection to maintain the confidentiality and integrity of the TOE. ALC\_DVS.2.1C requires that the developer shall describe all personnel, procedural and other security measures that are necessary to protect the confidentiality and integrity of the TOE design and implementation in its development and production environment. Thereby this objective contributes to meet the Security Assurance Requirement.

O.Physical-Access

ALC\_DVS.2.1C requires that the developer shall describe all physical security measures that are necessary to protect the confidentiality and integrity of the TOE design and implementation in its development environment. Thereby this objective contributes to meet the Security Assurance Requirement.

O.Reception-Control

ALC\_CMC.4.2C requires a CM documentation that describes the method used to uniquely identify the configuration items. ALC\_CMC.4.4C requires a unique identification of all configuration items by the CM system. ALC\_CMC.4.7C requires that the person accepting the configuration item in the CM system is not the person who developed it. ALC\_CMC.4.11C requires that the version of design data used to generate the modules can be identified. ALC\_CMC.4.14C requires the description of the procedures used to accept modified or newly created configuration items as part of the TOE. ALC\_CMS.5.2C addresses the same requirement as ALC\_CMC.4.4C. ALC\_DVS.2.2C requires security measures to protect the confidentiality and integrity of the TOE during the transfer between sites. Thereby this objective is suitable to meet the Security Assurance Requirement.

O.Security-Control

ALC\_DVS.2.1C requires that the developer shall describe all personnel, procedural and other security measures that are necessary to protect the confidentiality and integrity of the TOE design and implementation in its development and production environment. Thereby this objective contributes to meet the Security Assurance Requirement.

O.Security-Documentation

ALC\_DVS.2.1C requires that the developer shall have a security documentation and ALC\_DVS2.2C requires the justification that the described measures are appropriate to provide the necessary level of protection. Therefore, this objective contributes to meet the Security Assurance Requirements.

O.Staff-Engagement

ALC\_DVS.2.1C requires the description of personnel security measures that are necessary to protect the confidentiality and integrity of the TOE design and implementation in its development environment. Thereby the objective fulfils this combination of Security Assurance Requirements.

O.Transfer-Data

ALC\_DVS.2.1C: The development security documentation shall describe all the physical, procedural, personnel, and other security measures that are necessary to protect the confidentiality and integrity of the product design and implementation in its development environment. ALC\_DVS2.2C requires the justification that the described measures are appropriate to provide the necessary level of protection. Thereby this objective is suitable to meet the combination of Security Assurance Requirements.

O.Zero-Balance

ALC\_CMC.4.6C requires that the CM system supports the production of the TOE by automated means. ALC\_CMC.4.16C requires evidence demonstrating that the CM system is operated in accordance with the CM plan. ALC\_DVS.2.2C requires security measures that are necessary to protect the confidentiality and integrity of the TOE. ALC\_LCD.1.2C requires control over the development and maintenance of the TOE. Thereby this objective is suitable to meet the Security Assurance Requirement.

* 1. Mapping of the Evaluation Documentation

The scope of the evaluation according to the assurance class ALC comprises the processing and handling of security products and associated data as well as the complete documentation of the site provided for the evaluation.

The mapping between the internal site documentation and the Security Assurance Requirements is only available within the full version of the Site Security Target.

|  |  |  |
| --- | --- | --- |
| **SAR** | **Aspects** | **References** |
| **Mapping for ALC\_CMC.4** | | |
| **ALC\_CMC.4.1C**  *The CM documentation shall show that a process is in place to ensure an appropriate and consistent labelling.* | All | TBD |
| **ALC\_CMC.4.2C**  The CM documentation shall describe the method used to uniquely identify the configuration items. | All | TBD |
| **ALC\_CMC.4.3C**  The CM system shall uniquely identify all configuration items. | Evaluation evidence required by the SARs | TBD |
| **ALC\_CMC.4.4C**  The CM system shall provide automated measures such that only authorised changes are made to the configuration items. | All | TBD |
| **ALC\_CMC.4.5C**  The CM system shall support the production of the TOE by automated means. | All | TBD |
| **ALC\_CMC.4.6C**  The CM documentation shall include a CM plan | Module Encapsulation | TBD |
| **ALC\_CMC.4.7C**  The CM plan shall describe how the CM system is used for the development of the TOE. | All | TBD |
| **ALC\_CMC.4.8C**  The CM plan shall describe the procedures used to accept modified or newly created configuration items as part of the TOE. | Module Encapsulation | TBD |
| **ALC\_CMC.4.9C**  The evidence shall demonstrate that all configuration items are being maintained under the CM system. | Evaluation evidence required by the SARs | TBD |
| **ALC\_CMC.4.10C**  The evidence shall demonstrate that the CM system is being operated in  accordance with the CM plan*.* | Evaluation evidence required by the SARs | TBD |
| **Mapping for ALC\_CMS.5** | | |
| **ALC\_CMS.5.1C**  The configuration list shall include the following: the *product* itself; the evaluation evidence required by the SARs; the parts that comprise the *product*; the implementation representation; security flaw reports and resolution status; and development tools and related information. | Evaluation evidence required by the SARs | TBD |
| **ALC\_CMS.5.2C**  The configuration list shall uniquely identify the configuration items. | All | TBD |
| **ALC\_CMS.5.3C**  For each relevant configuration item, the configuration list shall indicate the developer/subcontractor of the item. | All | TBD |
| **Mapping for ALC\_DVS.2** | | |
| **ALC\_DVS.2.1C**  The development security documentation shall describe all the physical, procedural, personnel, and other security measures that are necessary to protect the confidentiality and integrity of the *product* design and implementation in its development environment. | All | TBD |
| **ALC\_DVS.2.1C** | Asset management | TBD |
| **ALC\_DVS.2.1C** | Human resources security | TBD |
| **ALC\_DVS.2.1C** | Physical and environmental security | TBD |
| **ALC\_DVS.2.1C** | Communications and operations management | TBD |
| **ALC\_DVS.2.1C** | Access control to information systems | TBD |
| **ALC\_DVS.2.1C** | Information systems acquisition, development and maintenance | TBD |
| **ALC\_DVS.2.1C** | Information security incident management | TBD |
| **ALC\_DVS.2.1C** | Business continuity management | TBD |
| **ALC\_DVS.2.2C**  The development security documentation shall justify that the security measures provide the necessary level of protection to maintain the confidentiality and integrity of the *product*. | All | TBD |
| **ALC\_DVS.2.3C**  The development security documentation shall justify that the security measures provide the necessary level of protection to maintain the confidentiality and integrity of the *product* as well as the confidentiality and integrity of the product during internal shipment. | All | TBD |
| **Mapping for ALC\_LCD.1** | | |
| **ALC\_LCD.1.1C**  The life-cycle definition documentation shall describe the model used to development and maintain the *product*. | Module Encapsulation | TBD |
| **ALC\_LCD.1.2C**  The life-cycle model shall provide for the necessary control over the development and maintenance of the *product*. | Module Encapsulation | TBD |
| **Mapping for AST Class** | | |
| AST\_INT | All | TBD |
| AST\_CCL | All | TBD |
| AST\_SPD | All | TBD |
| AST\_OBJ | All | TBD |
| Relation between security objectives and the security problem definition | All | TBD |
| AST\_ECD | All | TBD |
| AST\_REQ | All | TBD |
| AST\_SSS | All | TBD |

Table 8 mapping of the evaluation documentation

1. **Bibliography**

1. **EUROSMART.** *Security IC Platform Protection Profile with Augmentation packages.* Version 1.0, 2014.

2. **Common Criteria for Information Technology Security Evaluation.** *Part 1: Introduction and General Model.* Version 3.1, Rev. 5, April 2017.

3. —. *Part 3: Security Assurance Components.* Version 3.1, Rev. 5, April 2017.

4. **Common Methodology for Information Technology Secuirty Evaluation.** *Evaluation methodology.* Version 3.1, Rev.5, April 2017.

5. —. *Supporting Document, Site Certification.* Version 1.0, Rev.1, October 2007.

6. **Library, Join International.** *Minimum Site Security Requirements.* 2019 April. version 2.2.

7. **Informationstechnik, Bundesamt für Sicherheit in der.** *Guidance for Site Certification Version 1.1.* 2013-12-04.

8. **Common Criteria for Information Technology Security Evaluation.** *Supporting Document Guidance, Site Certification.* October 2007, Version 1.0.