

**K21047/03**

2021-03-30

Valid

# Wireless Silent Alarm Systems

for the certificate for Wireless Silent Alarm Systems for  
evacuation of buildings and sites.



**Trust  
Quality  
Progress**

# Preface

This European Certification Scheme has been accepted by the Kiwa Board of Experts Fire Safety, in which all the relevant parties in the field of Fire Safety are represented. This Boards of Experts also supervises the certification activities and where necessary require the Certification Scheme to be revised. All references to Board of Experts in this Certification Scheme pertain to the Boards of Experts mentioned above. This Certification Scheme will be used by Kiwa in conjunction with the Kiwa-Regulations for Certification, in which the general rules in case of certification are registered.

The purpose of this Certification Scheme is to make clear in which way a declaration of conformity is established regarding performance-, reliability- and security requirements of the assessed Wireless Silent Alarm System (WSAS). This based on the European standards in this scope.

The basic framework for this scheme has been standard NEN 2575-4; Fire safety of buildings - Evacuation alarm installations - System and quality requirements and guidelines for locating of alarm devices - Part 4: Wireless silent alarm installation and DIN 14675; Fire detection and fire alarm systems – Design and operation.

The framework in this scheme is covering all the functions and performances of this standard based on the European standards.

Additionally are the requirements on logging, reporting, alarm transmission software more strict. It has also an additional function on positioning and counting of staff in the designated areas and in the surrounding of the designated areas.

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The use of this evaluation guideline by third parties, for any purpose whatsoever, is only allowed after a written agreement is made with Kiwa to this end.

## Validation

This certification scheme has been validated by the Director Certification and Inspection of Kiwa FSS on 30-03-2021

# Contents

	<b>Preface</b>	<b>1</b>
	<b>Contents</b>	<b>2</b>
<b>1</b>	<b>Introduction</b>	<b>5</b>
1.1	General	5
1.2	Field of application / scope	6
1.2.1	Demarcation within scope	6
1.2.2	Optional scope with requirements	7
1.2.3	Functions of the WSAS	7
1.3	Technical and organizational resources	7
1.4	Acceptance of test reports provided by the supplier	7
1.5	Quality declaration	8
<b>2</b>	<b>Terms and definitions</b>	<b>9</b>
2.1	Definitions general	9
2.1.1	Board of Experts:	9
2.1.2	Certification mark:	9
2.1.3	Certification scheme:	9
2.1.4	Inspection tests:	9
2.1.5	IQC scheme (IQCS):	9
2.1.6	Initial assessment:	9
2.1.7	Private Label Certificate:	9
2.1.8	Product certificate:	9
2.1.9	Product requirements:	9
2.1.10	Process certificate:	9
2.1.11	Process requirements:	10
2.1.12	Supplier:	10
2.1.13	Surveillance assessment:	10
2.2	Specific definitions	10
2.2.1	Wireless Silent Alarm Systems (WSAS):	10
2.2.2	Control and indicating equipment Wireless Silent Alarm System (CIE WSAS):	10
2.2.3	Control and indicating equipment Fire Detection and Fire Alarm System (CIE FDFAS)	10
2.2.4	Alarm transmission and fault warning routing equipment	10
2.2.5	Building / site transmission devices	10
2.2.6	Monitoring Centre (MC);	10
2.2.7	Alarm Receiving Centre (ARC):	10
2.2.8	Secure location:	11
2.2.9	BYOD:	11
2.2.10	Compatibility for component type 1	11
2.2.11	Connectability for component type 2	11
2.2.12	Other alarm system:	11
2.2.13	Conditions:	11
2.2.14	Emergency Response Team (ERT)	11
2.2.15	Emergency Response Officer (ERO)	11
2.2.16	Transmission path	11
2.2.17	Mobile device	12

2.2.18	Dedicated mobile device	12
2.2.19	Hosted RCT:	12
2.2.20	Radio transmission	12
2.2.21	Dual path Alarm Transmission System	12
2.2.22	Diverse technology	12
<b>3</b>	<b>Procedure for granting a product certificate</b>	<b>13</b>
3.1	Initial investigation	13
<b>4</b>	<b>Product requirements WSAS</b>	<b>14</b>
4.1	General	14
4.2	Product requirements	14
4.3	System requirements	15
4.3.1	Loggings of the system	15
4.4	Functional requirements wireless alarm system	15
4.4.1	CIE WSAS	16
4.4.2	Server WSAS– system requirements	16
4.4.3	Building / site transmission devices supporting the WSAS	16
4.5	Mobile devices supporting the WSAS	16
4.5.1	Preconditions of mobile devices	17
4.6.1	Use and access levels of the application	17
4.6.2	Connections of the application	18
4.6.3	Acknowledgment un/setting	18
4.6.4	Uptime – availability – business continuity	18
4.6.5	Authenticity	18
4.6.6	Accountability	19
4.6.7	Session time	19
4.6.8	Instructions by the application towards the user	19
4.7.1	Process requirements	19
4.7.2	Process requirement stages	19
4.7.3	Testing	19
<b>5</b>	<b>Requirements process</b>	<b>21</b>
5.1	General	21
5.2	Regulatory requirements	21
5.3	Process requirements Services for fire safety systems	21
5.3.1	Planning (basic engineering) and detailed engineering WSAS plan	21
5.3.2	Commissioning and verification	21
5.3.3	Handover and maintenance	21
5.4	Other requirements	22
5.4.1	Instructions	22
5.4.2	Training	22
5.4.3	GDPR - General Data Protection Regulation	22
5.4.4	Monitoring Centre (MC)	22
5.4.5	Alarm Receiving Centre (ARC)	22
<b>6</b>	<b>Testing the performance of the systems</b>	<b>23</b>
6.1	General	23
6.2	Specific	23
<b>7</b>	<b>Factory production control components</b>	<b>24</b>

<b>8</b>	<b>Marking</b>	<b>25</b>
8.1	General	25
<b>9</b>	<b>Requirements in respect to the quality system</b>	<b>26</b>
9.1	Manager of the quality system	26
9.2	Internal quality control / quality plan	26
9.3	Control of test and measuring equipment	26
9.4	Procedures and working instructions	26
<b>10</b>	<b>Summary of tests and inspections</b>	<b>28</b>
10.1	Test matrix	28
10.2	Inspection of the quality system of the supplier	28
<b>11</b>	<b>Agreements on the implementation of certification</b>	<b>29</b>
11.1	General	29
11.2	Certification staff	29
11.2.1	Qualification requirements	29
11.2.2	Qualification	30
11.3	Report initial investigation	31
11.4	Decision for granting the certificate	31
11.5	Layout of quality declaration	31
11.6	Nature and frequency of third party audits	31
11.7	Non conformities	31
11.8	Report to the Board of Experts	31
11.9	Interpretation of requirements	31
11.10	Specific rules set by the Board of Experts	31
<b>12</b>	<b>Titles of standards</b>	<b>32</b>
12.1	Public law rules	32
12.2	Standards / normative documents	32
<b>I</b>	<b>Model certificate (example)</b>	<b>33</b>
<b>II</b>	<b>Model IQC-scheme manufacturer (example)</b>	<b>34</b>

# 1 Introduction

## 1.1 General

This European certification scheme includes all relevant requirements which are employed by Kiwa when dealing with applications for the issue and maintenance of a certificate for products, (systems), processes and services used for wireless silent alarm systems.

For the performance of its certification work, Kiwa is bound to the requirements as included in EN-ISO/IEC 17065 "Conformity assessment - Requirements for bodies certifying products, processes and services".

This certification scheme is drafted according EN-ISO/IEC 17067 "Conformity assessment - Fundamentals of product certification and guidelines for product certification schemes". This scheme is a type 6 according to this standard.

The 3e version of this certification scheme replaces the following certification scheme:

Certification scheme	Title	Dated
K21047/02	Wireless Silent Alarm Systems (WSAS)	2020-06-10

This 3<sup>th</sup> version of the certification scheme makes textual changes to clarify the goal(s) of the requirements in this scheme in the following paragraphs:

- 2.2.21 - new definition;
- 2.2.22 - new definition;
- 4.3 - the note in this text has extra clarification;
- 4.4.3 - the specifications for the building network are clarified functional;
- 5.4.5 - the function of the ARC has been clarified functional with additional fallback scenarios.

This version of the certification scheme can be used directly.

## 1.2 Field of application / scope

Figure 1 shows the demarcation of the wireless silent alarm system.

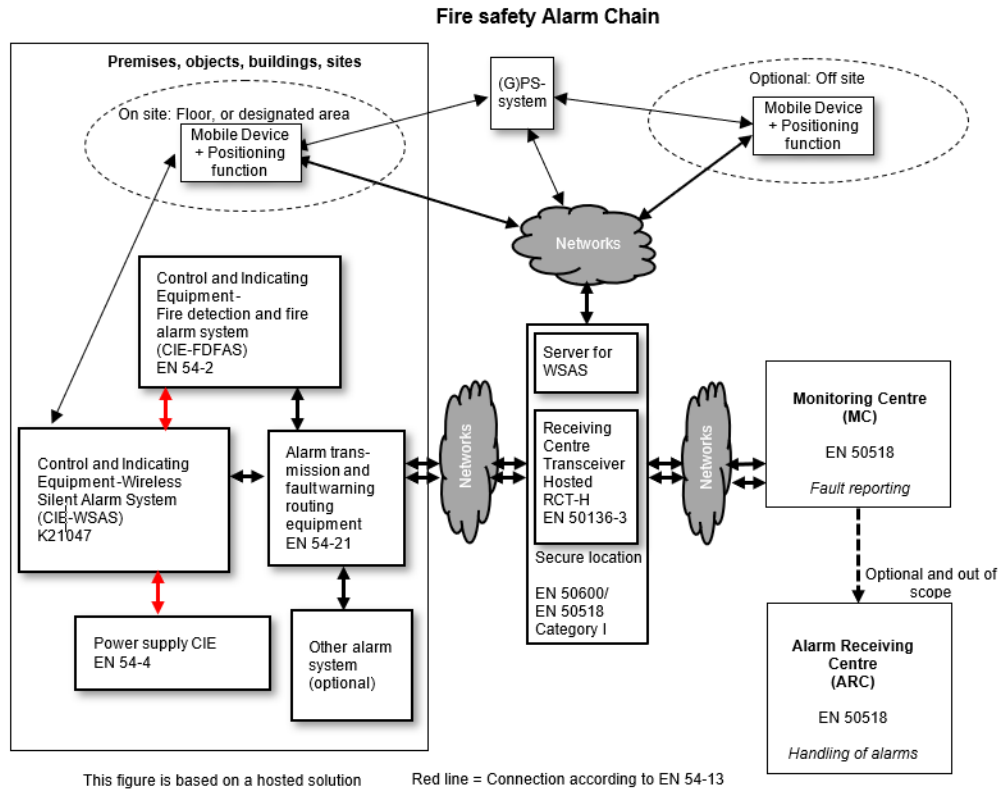


Figure 1 – infrastructure of the WSAS

### 1.2.1 Demarcation within scope

The wireless silent alarm system WSAS is intended to be used in buildings and/or on sites to relay the information of the fire detection and fire alarm system (FDFAS) in a building and/or on a site to for example the emergency response team (ERT) of the building and/or site. The WSAS can be used in a hosted and non-hosted situation. Primarily the scheme is written based on a hosted situation.

The goal of the product is to inform and alarm the emergency response team in the building and/or site in a timely and secured way of the status of the fire detection system or other alarm systems. In that way, the users of mobile devices such as emergency response officers (ERO) at a location are able to start the emergency response and/or evacuation process. The reliability and availability of the system is essential.

The following elements in the demarcation are within scope:

- The CIE of the Wireless Silent Alarm System;
- The critical alarm transmission between the CIE of the fire detection system and the CIE of the WSAS;
- The critical connection to the power supply for the WSAS;
- The critical alarm transmission between the central equipment of the WSAS and the server in the secure location. The secure location can also be in the supervised premises self (non-hosted).
- The critical alarm transmission between the server in the secure location and the mobile devices (MD).
- The application performing on the mobile device with its functions to support the users on site.

- The positioning function of the WSAS for determining the number of present mobile device users.

Additionally, the critical transmission between the server in the secure location and the Monitoring Centre (MC) is in scope for at least the reporting of the faults of the WSAS. In case an optional Alarm Receiving Centre (ARC) is used, that critical transmission is also in scope.

### **1.2.2 Optional scope with requirements**

An optional scope is the positioning function of the WSAS to users of the Mobile Devices who use their Mobile Devices off site. In this case the requirements for positioning the same as inside buildings.

### **1.2.3 Functions of the WSAS**

The functions of the WSAS are:

- Supervised alarm transmission of the fire detection system and the mobile devices of the emergency response team at the location;
- Informing of the WSAS-user about faults in the system;
- Reporting on the availability of the system;
- Reporting on the availability of the connected number of emergency response officers within the designated area of the emergency response team;
- Optional: Reporting on the availability of the connected number of emergency response officers off site.

## **1.3 Technical and organizational resources**

To achieve certification of a wireless silent alarm system, the assessment contains the following:

- The adoption of the demarcation and the specifications of the WSAS;
- The requirements of the product quality of relevant components;
- The requirements of the network architecture;
- The field inspection of the performance- & other requirements of the WSAS;
- The requirements of the security controls of the WSAS;
- The evaluation of the statistical data which is generated by the hardware and software of the WSAS;
- The requirements of the Monitoring Centre who collects the data and processes this according to the specifications of the WSAS;
- The requirements of the corrective actions by the WSAS on failing transmission by the system.

## **1.4 Acceptance of test reports provided by the supplier**

If the supplier provides reports from test institutions or laboratories to prove that the products meet the requirements of this certification scheme, the supplier shall prove that these reports have been drawn up by an institution that complies with the applicable accreditation standards, namely:

- NEN-EN-ISO/IEC 17020 for inspection bodies;
- NEN-EN-ISO/IEC 17021-1 for certification bodies certifying systems;
- NEN-EN-ISO/IEC 17024 for certification bodies certifying persons;
- NEN-EN-ISO/IEC 17025 for laboratories;
- NEN-EN-ISO/IEC 17065 for certification bodies certifying products.

### **Explanation:**

This requirement is considered to be fulfilled when a certificate of accreditation can be shown, issued either by the Board of Accreditation (RvA) or by one of the institutions with which an agreement of mutual acceptance has been concluded by the RvA. The accreditation shall refer to the examinations as required in this certification scheme.



When no certificate of accreditation can be shown, Kiwa shall verify whether the accreditation standard is fulfilled.

## **1.5 Quality declaration**

The quality declaration to be issued by Kiwa is described as a:

- product certificate for the manufacturing of the components/systems;
- process certificate for the delivery of installations of these systems;
- services certificate for the delivery of maintenance of these systems.

A model of these certificates to be issued based on this scheme has been included as an annex for information.

## **1.6 Assessment method type 6**

The normal assessment method per installation of this certification scheme is according EN-ISO/IEC 17067 "Conformity assessment - Fundamentals of product certification and guidelines for product certification schemes" type 6.

### **1.6.1 Assessment method type 1a**

If required by the authorities or a client, a type 1a assessment shall be performed.

This assessment shall be performed according EN-ISO/IEC 17020 "Conformity assessment - General criteria for the operation of various types of bodies performing inspection".

In this assessment method shall the system met the requirements and conditions of the standard(s).

This method shall create a complete overview of the system and if successful shall result in a system certificate.

In this method information is used generated by the supplier of the installation and co-suppliers of the conditions.

## 2 Terms and definitions

### 2.1 Definitions general

In this certification scheme, the following terms and definitions apply:

#### 2.1.1 **Board of Experts:**

the Board of Experts Fire Safety

#### 2.1.2 **Certification mark:**

a protected trademark of which the authorization of the use is granted by Kiwa, to the supplier whose products can be considered to comply on delivery with the applicable requirements and possibly with quality information on the application of the product is added by a specially designed label which is based on the result, as stated in the report issued by Kiwa on the inspection of the prototype.

#### 2.1.3 **Certification scheme:**

the agreements made within the Board of Experts on the subject of certification.

#### 2.1.4 **Inspection tests:**

tests carried out after the certificate has been granted in order to ascertain whether the certified products continue to meet the requirements recorded in the certification scheme.

#### 2.1.5 **IQC scheme (IQCS):**

a description of the quality inspections carried out by the supplier as part of his quality system.

#### 2.1.6 **Initial assessment:**

assessment in order to ascertain that all the requirements recorded in the certification scheme are met.

#### 2.1.7 **Private Label Certificate:**

A certificate that only pertains to processes that are also included in the certificate of a supplier that has been certified by Kiwa, the only difference being that the products and product information of the private label holder bear a brand name that belongs to the private label holder.

#### 2.1.8 **Product certificate:**

a document in which Kiwa declares that a product may, on delivery, be deemed to comply with the product specification recorded in the product certificate.

#### 2.1.9 **Product requirements:**

Concretised requirements specified by means of measures or figures, focussing on (identifiable) characteristics of products and containing a limiting value to be achieved, which can be calculated or measured in an unambiguous manner.

#### 2.1.10 **Process certificate:**

a document in which Kiwa declares that a process may, on delivery, be deemed to comply with the process specification recorded in the process certificate.

### **2.1.11 Process requirements:**

requirements made specific by means of measures or figures, focussing on (identifiable) characteristics of processes and containing a limiting value to be achieved, which can be calculated or measured in an unequivocal manner.

### **2.1.12 Supplier:**

the party that is responsible for ensuring that the processes meet and continue to meet the requirements on which the certification is based.

### **2.1.13 Surveillance assessment:**

the assessment after granting the certificate to determine that the certified processes continue to meet the requirements in this certification scheme.

Note 1: In the assessment matrix is summarized which research Kiwa will conduct at the initial and surveillance assessments and in which frequency.

## **2.2 Specific definitions**

In this certification scheme, the following specific terms and definitions apply:

### **2.2.1 Wireless Silent Alarm Systems (WSAS):**

product intended to be used in buildings and/or on sites to relay the information of the fire detection and fire alarm system in a building and/or on a site to the emergency response team of the building and/or site (or optional off site)

### **2.2.2 Control and indicating equipment Wireless Silent Alarm System (CIE WSAS):**

operating possibility which, in case of fire or other emergency, can call silent alarm groups manually.

### **2.2.3 Control and indicating equipment Fire Detection and Fire Alarm System (CIE FDFAS)**

Component of wireless silent alarm system through which other components may be supplied with power and which is used to receive signals from the connected detectors.

### **2.2.4 Alarm transmission and fault warning routing equipment**

Intermediate equipment which routes an alarm signal or fault warning from a control and indicating equipment (CIE) to a Monitoring and Alarm Receiving Centre (MARC).

[SOURCE: EN 54-1]

### **2.2.5 Building / site transmission devices**

For example a Wi-Fi access point at a location.

### **2.2.6 Monitoring Centre (MC);**

centre in which the status of one or more ATSNs is monitored.

[SOURCE: 4.1.15 EN 50136-1/A1]

### **2.2.7 Alarm Receiving Centre (ARC):**

continuously manned centre where information concerning the status of one or more Alarm System (AS) is reported

[SOURCE: 4.1.2 EN 50136-1/A1]

### **2.2.8 Secure location:**

location that is a MARC or another location that complies with a published data centre standard.

Note 1: Examples of published data centre standards or accepted best practices are: a data centre designed and maintained to EN 50600 series. Availability class 3, protection class 4 or ARC category I in accordance to EN 50518; or as best practice Uptime Institute Tier 3.

[SOURCE: 4.1.38 EN 50136-1/A1]

### **2.2.9 BYOD:**

Bring your own device.

Note: BYOD is not permitted.

### **2.2.10 Compatibility for component type 1**

ability of a component type 1 to operate with other type 1 components of the FDFAS:

- within the limits specified for each component given in the documentation;
- within the specified limits given by the relevant parts of EN 54, or given by the applicant; if no EN 54 part applies;
- within specified configurations of systems.

[SOURCE EN 54-13, 3.1.2]

### **2.2.11 Connectability for component type 2**

ability of component type 2 to operate without jeopardizing the performance of the fire detection and fire alarm system.

[SOURCE EN 54-13, 3.1.5]

### **2.2.12 Other alarm system:**

system that can create an alarm as start for the evacuation process as an example a system according to EN 50131.

### **2.2.13 Conditions:**

for the functioning of a WSAS, certain conditions are needed. These conditions can be for example a fire detection system or a good performing user group.

### **2.2.14 Emergency Response Team (ERT)**

An Emergency Response Team (ERT), originally intended to evacuate employees and to fight fires, is an internal organization of typically volunteer employees designed to respond to emergencies before the arrival of public agencies.

Note 1: In Dutch you could translate this with BHV-organisatie.

Note 2: In German you could translate this with Betriebssanitäter.

### **2.2.15 Emergency Response Officer (ERO)**

people who are trained to be the first line of response in any emergency situation.

### **2.2.16 Transmission path**

physical connection between the components (external to the housing of the components) used for the transmission of information and/or power.

[SOURCE EN 54-13]

**2.2.17 Mobile device**

Smart mobile device with a positioning function to be used in a Wireless Silent Alarm System.

**2.2.18 Dedicated mobile device**

Devices which are used if needed based on the infrastructure of the Wireless Silent Alarm system.

**2.2.19 Hosted RCT:**

RCT that consists of two parts, where one part is located in a secure location (RCT-H) and another part is installed in the MARC (RCT-A).

[SOURCE: 4.1.41 EN 50136-1/A1]

**2.2.20 Radio transmission**

Radio transmission is a possibility for alarm transmission as defined in EN 50136-1/A1.

**2.2.21 Dual path Alarm Transmission System**

Alarm Transmission System consisting of one primary Alarm Transmission Path and one secondary Alarm Transmission Path using diverse technology, having two transmission network interfaces at the Supervised Premise Transceiver, to connect one or more (Wireless Silent) Alarm System of one supervised premises to one or more MARCs.

[SOURCE: 4.1.16 EN 50136-1]

**2.2.22 Diverse technology**

Technologies used in transmission paths in such a way that a single point of failure, or tampering of a single point, cannot cause both Alarm Transmission Paths of a dual path system to fail simultaneously.

[SOURCE: 4.1.15 EN 50136-1]

## **3 Procedure for granting a product certificate**

### **3.1 Initial investigation**

The initial investigation to be performed is based on the (product, process and system) requirements as contained in this certification scheme, including the test methods, and comprises the following:

- type testing to determine whether the products comply with the product and/or functional requirements;
- production process assessment (if applicable);
- design process assessment;
- installation process assessment;
- maintenance process assessment;
- assessment of the quality system and the IQC-scheme;
- assessment on the presence and functioning of the remaining procedures.

### **3.2 Granting the product/process certificate**

After finishing the initial investigation, the results are presented to the decision maker deciding on granting the certificate. This person evaluates the results and decides whether the certificate can be granted or if additional data and/or tests are necessary.

### **3.3 Investigation into the process and/or performance requirements**

Kiwa will investigate to be certified products / systems against the certification requirements as stated in the certification requirements.

The necessary samples will be drawn by or on behalf of Kiwa.

### **3.4 Production process assessment**

When assessing the production process, it is investigated whether the manufacturer is capable of continuously producing products that meet the certification requirements.

The evaluation of the production process takes place during the ongoing work at the producer.

The assessment also includes at least:

- The quality of raw materials, half-finished products and end products;
- Internal transport and storage.

### **3.5 Contract assessment**

If the supplier is not the manufacturer of the products to be certified, Kiwa will assess the agreement between the supplier and the producer.

This written agreement, which is available for Kiwa, includes at least:

That accreditation bodies, scheme managers and Kiwa will be given the opportunity to observe the certification activities carried out by Kiwa or on behalf of Kiwa at the producer.

## 4 Product requirements WSAS

### 4.1 General

This chapter contains the requirements that products have to fulfil.

The requirements for timely alarming, supervision of the transmission and the availability of the system are arranged in the product and system requirements.

### 4.2 Product requirements

The devices arranging the critical alarm transmission have to comply with the requirements in one of the following standards depending on the intended use:

- EN 50136-2; Alarm systems - *Alarm transmission systems and equipment - Part 2: Requirements for Supervised Premises Transceiver (SPT)*
- EN 50136-3; Alarm systems - *Alarm transmission systems and equipment - Part 3: Requirements for Receiving Centre Transceiver (RCT)*;
- EN 54-21; Fire detection and fire alarm systems - Part 21: Alarm transmission and fault warning routing equipment

The critical transmission connections are:

- CIE Fire Detection System <> CIE WSAS;
- CIE WSAS <> Server secure location
- Server secure location <> Mobile devices users.

*Note 1: These requirements are about the software of the devices.*

*Note 2: "<>" means a connection.*

Note 3: the secure location could also be at the premises if the same requirements are fulfilled.

The connection between CIE WSAS and the CIE FDFAS, the CIE WSAS and the power supply have to comply with the requirements in EN 54-13; Fire detection and fire alarm systems - Part 13: Compatibility assessment of system components;

- CIE Fire Detection System <> CIE WSAS (type 1);
- CIE WSAS <> Power Supply of the CIE WSAS (type 1).
- CIE WSAS <> Alarm transmission and fault Warning routing equipment (type 1)

The CIE WSAS has to comply with the requirements in EN54-13 Fire detection and fire alarm systems - Part 13: Compatibility assessment of system components type 1.

The power supply of the central equipment of the WSAS has to comply with requirements in EN 54-4; Fire detection and fire alarm systems - Part 4: Power supply equipment. If the secure location is within the supervised premises, EN54-4 is also applicable for this solution.

For other alarm systems the configuration with the WSAS shall be in according with the EN 50131.

The requirements for the software application on the mobile devices and the WSAS are specified in 4.6

### 4.3 System requirements

The supervised alarm transmission between the central equipment of the WSAS and the server in the secure location have to comply with the requirements in EN 50136-1/A1 / IEC 60839-5-1; Alarm and electronic security systems – Part 5-1: Alarm transmission systems – General requirements; based on certification scheme K21030 for the scope critical transmission.

The level of the secure alarm transmission is Dual Path 4 (DP 4). See EN 50136-1/A1.

The supervised alarm transmission between the mobile devices of the WSAS and the server in the secure location have to comply with the requirements in EN 50136-1/A1 / IEC 60839-5-1; Alarm and electronic security systems – Part 5-1: Alarm transmission systems – General requirements;

The level of the secure alarm transmission is Dual Path 2 (DP 2) see EN 50136-1/A1. The reporting is accessible for the user of the system and inspection bodies.

*Remark: The possible radio transmission bands are 2G, 3G, 4G, 5G and Wi-Fi. SMS can be used as transmission layer. This scheme does not stipulates which technology should be used for a transmission path. It does require a double path connection to all the mobile devices of the users based on divers technology. In case that divers technology is not possible in spots of the building is the use of function reliability based on the principles in NPR2576 a possible solution.*

SMS is only used as a backup when data transmission is not available.

The capacity of the used network shall be such that it has sufficient capacity in a normal and in an incident situation to interact with all the users.

The positioning function (GPS) of the WSAS per mobile device user has to meet the following specifics:

- In the building and/or site are devices (such as Wi-Fi transmitters) needed to facilitate the communication of the system of the users of the emergency response team.
- Accuracy positioning on a surface level: this has to be specified by the supplier, it needs to have a minimal accuracy of 100 meter and be determined using at least two methods of location positioning. In case of inaccurate Wi-Fi and GPS positioning there needs to be a manual input for users. The positioning function has a relation with alarm zone in the basic design of the WSAS.
- A designing and verification function tool for the determination of the number of local devices for the position function per building / floor and the verification of the function when installed. The basic criteria for this tool are accuracy positioning, adequate speed of transmission and adequate availability of transmission.

Note: The positioning function to be used off site is the same as on site.

#### 4.3.1 Loggings of the system

According to EN 50136-1 / IEC 60839-5-1 loggings are made of the functions of all the devices within the system. The system shall have a capacity of at least 3 months to store this data.

### 4.4 Functional requirements wireless alarm system

In this chapter the additional functions are described that are not arranged in the product and system requirements.



#### **4.4.1 CIE WSAS**

The wireless silent alarm system must have an operating possibility (control panel) which, in case of fire or other emergency, can call silent alarm groups manually.

#### **4.4.2 Server WSAS– system requirements**

All transmission paths of wireless silent alarm systems are intended for use by wireless silent alarm systems. Secondary application transmission pathways for wireless alarm systems must not have a negative influence on the primary purpose of the transmission paths for wireless silent alarm.

The equipment shall be a stand-alone application for alarm handling. The software application changes may only be made by trained and authorized personnel for this equipment.

The equipment shall handle a fire / evacuation alarm with the highest priority.

Note: the server of the WSAS can be at a premises (non-hosted) or at a secure location (hosted)

#### **4.4.3 Building / site transmission devices supporting the WSAS**

The local transmission devices supporting the WSAS shall provide sufficient coverage for the evacuation area. In case of failure in transmission, the reception of messages in an area may not become below the level of availability of the WSAS per week and year (based on EN 50136-1/A1) and being monitored for proper functioning and shall be controlled and indicated by the software tool of the WSAS.

The instruction of the WSAS shall specify that the local transmission devices for supporting of the WSAS shall:

- be suitable for the location where it is set up;
- comply with telecommunication legislation that applies to it.

The specifications for the building network are:

- GPS location of a smartphone must be accurate to at least 100 meter;
- Connections with technology such as WIFI & public telecom networks shall have a signal strength and speed according to technical specifications of the supplier of these networks meeting the minimal qualification "fair".

#### **4.5 Mobile devices supporting the WSAS**

The business continuity strategy of the WSAS is such that regular mobile devices can be used supporting the functioning of the WSAS. By enforcing this strategy on a location, the possibility is created that all staff from the organisation using the WSAS present on the designated location can use their regular mobile device obtaining a high percentage of users.

This high percentage of users creates the ability to have a more direct action of the emergency response team based on the emergency response plan for the location and a higher business continuity for the WSAS.

Note: If needed within the infrastructure of the building and/or site, dedicated WSAS devices can be used. This has to stipulated within the basic engineering WSAS - plan of the building / site.

Note: Due to obtaining a proper Confidentiality, Integrity and Availability (CIA) level in terms of information security, BYOD solutions in this WSAS infrastructure are not permitted.

#### **4.5.1 Preconditions of mobile devices**

The mobile devices have to be set in the following preconditions by the software tool of the WSAS on the device:

- the audible alarm signal on the receiving mobile device must be at least 65 dB (A) at 1 m and must be clearly distinguishable from other call signals. Is the sound pressure level of the ambient noise 59 dB (A) or more, the receiving mobile device must also be clearly felt through a vibrating signal.
- the acoustic signal in the event of an alarm may not interrupt the voice communication;
- the acoustic signal from the receiving device must remain active during a silent alarm call until it is manually confirmed or up to a maximum of 60 seconds if it is not manually confirmed;
- a receiving mobile device must give a text message with at least the room/location that should be evacuated (for example the alarm zone or area);
- the language of the text message must be aligned with the emergency response & evacuation team and shall be recorded in the basic engineering plan of the WSAS for the building/site;
- the text messages relating to an evacuation alarm must have the highest priority, recognizable as such and clearly distinguishable from other messages;
- the receiving mobile devices give an acoustic and visual warning when the battery capacity is too low. This warning is made when the battery capacity reaches 10% of its maximal capacity. The warning does not have to be reported to the CIE of the WSAS;
- the receiving mobile devices cannot be switched off without an acoustic and/or optical warning;
- the receiving mobile device gives "information about availability within the defined zone", no later than 15 minutes when out of range with the WSAS if this is a control setting in the basic engineering plan based of the emergency response (evacuation) plan;
- the selection of the mobile device is such that the energy supply must be sufficient for at least 12 hours of operation. The supplier shall specify this in its instruction for the software tool.

The mobile devices shall have the following settings and shall be monitored by the WSAS:

- The Mobile Device Operating system shall be updated at least once per 2 years.
- The Push notifications shall be turned on, and on priority when possible.
- The Location services shall be turned on, and on high accuracy when possible.

The mobile devices shall have the following settings:

- Any battery savers, task killers and virus scanners need to be turned off.
- VPN shall be turned off.
- Wi-Fi and Mobile data shall be turned on.

Remark; if these settings are not met by the users this shall result in a low availability of users in a designated area. This shall be reported by the WSAS.

#### **4.6 Mobile application and hosted web platform**

This part contains the requirements that the application on the mobile device, CIE WSAS and the hosted web platform shall have to fulfil.

##### **4.6.1 Use and access levels of the application**

The mobile application is intended to be used on general mobile smart devices. The mobile application shall connect direct by radio transmission to the WSAS.

The application requires a logical access level 2 on the smart mobile device according to EN 50131-1. The application shall enforce a new code after first installation.

The CIE WSAS shall connect to the hosted web platform. This requires a logical access level 3 according to EN 50131-1.

#### **4.6.2 Connections of the application**

The applications shall have a secure and confidential connection to the CIE of the WSAS and meet the key management requirement of TLS1.2.

Key management shall be arranged according to ISO/IEC 11770-1/2/3

The integrity of this connection shall be arranged on cryptographic algorithms according to ISO/IEC 18033. The hash functions according to this shall also be applied for non-repudiation.

The cryptographic algorithms shall meet the updated list of SSL labs or better.

The CIE of the WSAS shall have a secure connection to a hosted web platform according to IEC 60839-5-1 (EN 50136-1/A1).

#### **4.6.3 Acknowledgment un/setting**

The setting made on the CIE shall be acknowledged by the CIE of the WSAS and the hosted web platform. These settings shall also be communicated to the mobile devices.

The setting made in the hosted web platform shall be acknowledged by the CIE of the WSAS and the application of the mobile device.

By this the live situation is reflected by the application.

The process shall be fail-safe; that means that if during normal use the connection fails, the process is stopped and that the not completed changed settings shall fall back to the last completed settings.

#### **4.6.4 Uptime – availability – business continuity**

The availability of the hosted web platform shall meet the requirements DP4 according to IEC 60839-5-1 (EN 50136-1/A1).

The hosted web platform shall be hosted from a secure location complying with EN 50518 or EN 50600

#### **4.6.5 Authenticity**

The definitions and processes of ISO/IEC 29115 shall be applied.

LoA3 shall be defined in the process of getting first access (onboarding) as a user to all applications.

The mobile application shall restrict a limited time within 2 factor authentication process.

The procedure of getting access to the mobile application on the mobile device shall be the same as access to the CIE WSAS.

The procedure giving more users entrance (on different levels) to the mobile application is the same as for the CIE WSAS.

The process of remote access by the installer / supplier shall require at least 2 factor authentication.

It is allowed to use biometrics according to the standardisation group ISO/IEC JTC 1 SC 37 on Biometrics.

#### **4.6.6 Accountability**

The hosted web platform and the mobile application shall apply logging.

The minimum storing time of the logs for the hosted web platform and the mobile application is 3 months.

#### **4.6.7 Session time**

A maximum session time shall be applied preventing unauthorised use for critical function(s) within the mobile application. For example: opening the mobile application function for (setting) the CIE WSAS.

Protection against hostile access (brute force) to the mobile application within the secure functions shall be tested by penetration testing in the developing stage of the application.

#### **4.6.8 Instructions by the application towards the user**

The mobile application shall warn and instruct the user to use the mobile application in a secure manner.

### **4.7 Secure development process for the code**

This part contains the requirements that the secure development process for the code of the mobile application and the hosted web platform shall have to fulfil.

*Remark; An approved process according to scheme K21048 fulfils also this requirement.*

#### **4.7.1 Process requirements**

The process shall fulfil the requirements of “A.14.2 Security in development and support processes” of ISO 27001 or the secure development processes according to IEC 62443-4-1; Security for industrial automation and control systems - Part 4-1: Secure product development lifecycle requirements.

The manufacturer shall have an accredited certificate according to this standard for this activity or this process and it shall be assessed by an expert of Kiwa.

#### **4.7.2 Process requirement stages**

The secure development process shall contain at least the following stages:

1. Planning with project management;
2. Analyses of the epics, user stories, use cases;
3. Design with architecture & user experience;
4. Building the code by the developers;
5. Testing of the code; testing is continuous process for control and verification of the functions and the threats / weaknesses of the security;
6. Deploying of the code in a hosted solution;
7. Review of the process for improvement of the next development.

#### **4.7.3 Testing**

The security testing of the code is based on minimum requirements in “The Ten Most Critical Web Application Security Risks” according to the latest OWASP rules, laid down at; [www.owasp.org/](http://www.owasp.org/)

The code shall be tested according the latest applicable version of these rules.

The testing shall be performed in the end-to-end situation in a laboratory situation.

The testing shall be performed by an expert with a validated qualification by Kiwa.

The qualification shall be based on the:

- Level of general knowledge and experience of code testing (5 years);
- Level of specific knowledge and experience of the code (3 years);
- Level of general knowledge and experience of the product in its application in the specific market sector (1 year);
- Level of specific knowledge and experience of the latest OWASP rules based of the applicable specific "Vulnerability Subcategories" (2 years).

# 5 Requirements process

## 5.1 General

This chapter contains the requirements that the delivery process have to fulfil.

## 5.2 Regulatory requirements

Not applicable.

## 5.3 Process requirements Services for fire safety systems

The requirements of the planning, design, installation, commissioning, verification, handover and maintenance are specified in EN 16763 "Services for fire safety systems and security systems".

Note: this standard does not apply to the manufacturer of the WSAS.

### 5.3.1 *Planning (basic engineering) and detailed engineering WSAS plan*

The basic engineering plan for the WSAS outlines the engineering for the WSAS at a location. The software application of the WSAS shall be able to arrange following preconditions:

- Alarm zones; The evacuation area shall be divided into one or more alarm zones. Depending on the size of the object, there may be several silent alarm groups each be responsible for the evacuation of one or more alarm zones;
- Number of receiving mobile devices; Minimal number of receiving mobile devices that belong to the silent alarm group within in a predefined alarm zone;
- Alarm conditions; The conditions to trigger an alarm;
- These alarm zones and minimum number of silent alarm groups shall be recorded in the basic engineering plan for the system for the location and to able to be implemented in the software application of the WSAS.
- The possibilities of negative interference on the WSAS must be addressed in basic engineering plan.
- Reporting malfunctions.
- Language text on the control panel.
- Language text on the mobile devices.

Note; The basic engineering plan WSAS should be developed in conjunction with emergency response (evacuation) plan of the building and / or site. If the emergency response plan is updated this may have consequences for the basic engineering plan of the WSAS. The user of the WSAS is responsible for informing concerning parties and taking proper action if needed.

### 5.3.2 *Commisioniong and verification*

The WSAS shall have a reporting function providing responsible staff with information about the functioning and availability of the system components during commissioning and verification.

This report shall be the basis of the verification report needed for the handover and needed for the declaration of conformity about the installation of the WSAS.

This report and the declaration of conformity about the installation of the WSAS shall be the basis of the declaration of conformity about the system.

### 5.3.3 *Handover and maintenance*

The user(s) of the WSAS shall be trained by the supplier of the WSAS in the correct handling of the system

After the handover of the system shall the WSAS have a reporting function providing responsible staff with information about the functioning, capacity and availability of the system components during its use and its maintenance.

This report shall be the basis of the maintenance report needed for the declaration of conformity about the maintenance.

This report and the declaration of conformity about the maintenance of the WSAS shall be the basis of the declaration of conformity about the system.

## **5.4 Other requirements**

### **5.4.1 Instructions**

The supplier shall design and deliver together with its WSAS an installation, user and maintenance instruction. This instruction together with the software application shall arrange the access levels to the system according EN 50131-1.

### **5.4.2 Training**

The supplier shall design and deliver training to the staff that has the task for the setting of the configurations of the WSAS.

### **5.4.3 GDPR - General Data Protection Regulation**

The user registration to the WSAS and the positioning function of the system shall meet the requirements of the General Data Protection Regulation (GDPR).

The requirements in this scheme attempt to fulfil these requirements in technical way.

A contract for parties exchanging personal data is needed

### **5.4.4 Monitoring Centre (MC)**

The use of a Monitoring Centre (MC) is obliged for the reporting of faults. The MC must be certified according to EN 50518 in conjunction with the Alarm Transmission Service Provider certified according to K21030.

### **5.4.5 Alarm Receiving Centre (ARC)**

The use of an Alarm Receiving Centre is optional and out of scope for the system supplier.

The function of the ARC in this process is to act as the secondary escalation process based on manual handling by the staff of the ARC. The primary escalation process is the responsibility of the emergency response organisation of the building / site. In case if the primary escalation process is insufficient shall secondary escalation process assist in this process to arrange sufficient staff for the emergency response organisation.

The applicable acting and Alarm Receiving Centre has to fulfill the requirements of EN50518.

The function of the ARC may also be fulfilled by automated fallback scenarios arranging the secondary escalation process alarming additional staff to act for the emergency response organisation of the building / site to arrange sufficient staff for the emergency response organisation.

# 6 Testing the performance of the systems

## 6.1 General

This chapter contains the requirements for testing by Kiwa to determine the performances that the systems have to fulfil.

These tests are necessary if there is no integer information available according to these standards by acceptable approval bodies such as test laboratories fulfilling the requirements ISO17025 “General requirements for the competence of testing and calibration laboratories” or ISO17065 “Conformity assessment - Requirements for bodies certifying products, processes and services”.

## 6.2 Specific

The products shall be tested according the requirements in chapter 4 of this scheme.



# 7 Factory production control components

## 7.1 General

This chapter contains the requirements for factory production control (FPC) by Kiwa of the manufacturers of essential components (products) of wireless silent alarm systems to determine the quality of these components that the systems have to fulfil. This factory production control of the manufacturer of components (products) is necessary if there is no integer information available according to these standards by acceptable approval bodies according ISO17065 "Conformity assessment - Requirements for bodies certifying products, processes and services".

## 7.2 Audit / inspection FPC

The quality system of the supplying manufacturer will be checked by Kiwa based on the IQC scheme/Quality plan.

The inspection contains at least those aspects mentioned in the Kiwa Regulations for Certification and the requirements of the applicable standards.

The quality system of the supplying manufacturer shall be audited internally by the suppliers at least once a year.

The quality system of the supplying manufacturer shall be audited externally by Kiwa at least once a year.

The manufactured components shall be inspected internally by the supplier according to the IQC scheme/Quality plan.

Kiwa shall witness a relevant sample of these inspections at least once a year as defined in the Kiwa Quality plan of the scheme and scope.

# 8 Marking

## 8.1 General

The systems and products shall be marked with a declaration of conformity according to this certification scheme and applicable standards. The declaration shall contain at least the following information:

- name or logo of the supplier or manufacturer;
- data or code indicating the date of delivery or maintenance;
- type indication;
- certification marking according to this scheme.

Indications and markings shall at least fulfil the requirements in the relevant product standard.

## 8.2 Certification mark

After concluding a Kiwa certification agreement, the certified products shall be indelibly marked with the certification mark as is detailed in this scheme.

### 8.2.1 Product / component marking

Essential components with an FPC of Kiwa shall be affixed with a marking according to 7.1 of this scheme.

### 8.2.2 Installation marking

Installations fulfilling the requirements shall be marked with an installation declaration of conformity according to this certification scheme and applicable standards.

### 8.2.3 System marking

Installations and conditions supporting the functions of the installation fulfilling the requirements shall be marked with a system declaration of conformity according to this certification scheme and applicable standards.

These conditions are not in control of the supplier of the fire repression system.

To achieve a system declaration of conformity is the full co-operation of the user of the system needed and its contractors.

This is operated according to chapter 1.5.1 of this scheme.

### 8.2.4 Maintenance marking

Maintenance of installations fulfilling the requirements shall be marked with a maintenance declaration of conformity according to this certification scheme and applicable standards.

## 9 Requirements in respect to the quality system

This chapter contains the requirements which have to be met by the supplier's quality system.

### 9.1 Manager of the quality system

Within the supplier's organisational structure, an employee who will be in charge of managing the supplier's quality system must have been appointed.

### 9.2 Internal quality control / quality plan

The supplier shall have an internal quality control scheme/plan which is applied by them.

The following must be demonstrably recorded in this QC scheme/plan:

- which aspects are checked by the supplier;
- according to what methods such inspections are carried out;
- how often these inspections are carried out;
- in what way the inspection results are recorded and kept.

This IQC scheme should at least be an equivalent derivative of the model QC scheme / plan as shown in the Annex.

### 9.3 Control of test and measuring equipment

The supplier shall verify the availability of necessary test and measuring equipment for demonstrating product conformity with the requirements in this evaluation guideline.

When required the equipment shall be kept calibrated (e.g recalibration at interval).

The status of actual calibration of each equipment shall be demonstrated by traceability through a unique ID.

The supplier must keep records of the calibration results.

The supplier shall review the validity of measuring data when it is established at calibration that the equipment is not suitable anymore.

### 9.4 Procedures and working instructions

The supplier shall be able to submit the following:

- procedures for:
  - dealing with products showing deviations;
  - corrective actions to be taken if non-conformities are found;
  - dealing with complaints about products and/or services delivered;
- the working instructions and inspection forms used.

### 9.5 Qualification requirements of staff

Staff acting in critical stages of the process needs to be qualified according the model in EN 16763 "Services for fire safety systems and security systems".

In this scheme are following roles defined:

"A" is defined for the manager responsible for the total delivery process of the fire repression system and the stages verification and handover;

"B" is defined for the staff responsible for the planning, design and commissioning process of the fire repression system.

"C" is defined for the staff responsible for the installation and maintenance process of the fire repression system.

#### **9.5.1 Requirements exams / diplomas**

Kiwa shall specify per scope per role in its quality plan what exams or diplomas meets these requirements.

Kiwa shall make use of the requirements per diploma per scope on this site:

[https://www.certoplan.nl/Eindtermen\\_procedures\\_reglementen/](https://www.certoplan.nl/Eindtermen_procedures_reglementen/)

#### **9.6 Planning audit and inspections**

The supplier of the WSAS shall arrange that Kiwa can perform its yearly audit and the necessary inspections on site. The supplier shall use the registration tools of Kiwa.

# 10 Summary of tests and inspections

This chapter contains a summary of the following tests and inspections to be carried out in the event of certification:

- **initial investigation:** tests in order to ascertain that all the requirements recorded in the evaluation guideline are met;
- **inspection test:** tests carried out after the certificate has been granted in order to ascertain whether the certified products continue to meet the requirements recorded in the evaluation guideline;
- **inspection of the quality system of the supplier:** monitoring compliance of the IQC scheme and procedures.

## 10.1 Test matrix

Description of requirement	Article no. scheme	Tests within the scope of:	
		Pre-certification	Inspection by Kiwa after granting of certificate a,b)
Process requirements WSAS			
Per applicable scope	5	x	x
Product requirements WSAS			
If needed per applicable scope	4	x	x
Testing the performance of the WSAS			
If needed per applicable scope	6	x	x
Factory production control components			
If needed per applicable scope	7	x	x
Quality system and Certification mark			
	8 & 9	x	X

a) In case the product or production process changes, it must be determined whether the performance requirements are still met.

b) All product characteristics that can be determined within the visiting time (maximum 1 day) are determined by the inspector or by the supplier in the presence of the inspector. In case this is not possible, an agreement will be made between the certification body and the supplier about how the inspection will take place. The frequency of inspection visits is defined in chapter 11.6 of this evaluation guideline.

## 10.2 Inspection of the quality system of the supplier

The quality system of the supplier will be checked by Kiwa based on the IQC scheme. The inspection contains at least those aspects mentioned in the Kiwa Regulations for Certification.

# 11 Agreements on the implementation of certification

## 11.1 General

Beside the requirements included in these evaluation guidelines, the general rules for certification as included in the Kiwa Regulations for Product Certification also apply. These rules are in particular:

- the general rules for conducting the pre-certification tests, in particular:
  - the way suppliers are to be informed about how an application is being handled;
  - how the tests are conducted;
  - the decision to be taken as a result of the pre-certification tests.
- the general rules for conducting inspections and the aspects to be audited,
- the measures to be taken by Kiwa in case of Non-Conformities,
- the measures taken by Kiwa in case of improper use of Certificates, Certification Marks, Pictograms and Logos,
- terms for termination of the certificate,
- the possibility to lodge an appeal against decisions of measures taken by Kiwa.

## 11.2 Certification staff

The staff involved in the certification may be sub-divided into:

- Certification assessor (**CAS**): in charge of carrying out the pre-certification tests and assessing the inspectors' reports;
- Site assessor (**SAS**): in charge of carrying out external inspections at the supplier's works;
- Decision maker (**DM**): in charge of taking decisions in connection with the pre-certification tests carried out, continuing the certification in connection with the inspections carried out and taking decisions on the need to take corrective actions.

### 11.2.1 Qualification requirements

The qualification requirements consist of:

- qualification requirements for personnel of a certification body which satisfies the requirements EN ISO / IEC 17065, performing certification activities
- qualification requirements for personnel of a certification body performing certification activities set by the Board of Experts for the subject matter of this evaluation guideline

Education and experience of the concerning certification personnel shall be recorded demonstrably.

Basic requirements	Evaluation criteria
Knowledge of company processes Requirements for conducting professional audits on products, processes, services, installations, design and management systems.	<i>Relevant experience: in the field</i> <b>SAS, CAS:</b> 1 year <b>DM:</b> 5 years inclusive 1 year with respect to certification Relevant technical knowledge and experience on the level of: <b>SAS:</b> High school <b>CAS, DM:</b> Bachelor

Basic requirements	Evaluation criteria
Competence for execution of site assessments. Adequate communication skills (e.g. reports, presentation skills and interviewing technique).	<b>SAS:</b> Kiwa Audit training or similar and 4 site assessments including 1 autonomic under review.
Execution of initial examination	<b>CAS:</b> 3 initial audits under review.
Conducting review	<b>CAS:</b> conducting 3 reviews

Technical competences	Evaluation Criteria
Education	<b>General:</b> Education in one of the following technical areas: • Engineering.
Testing skills	<b>General:</b> • 1 week laboratory training (general and scheme specific) including measuring techniques and performing tests under supervision; • Conducting tests (per scheme).
Experience - specific	<b>CAS</b> • 3 complete applications (excluding the initial assessment of the production site) under the direction of the <b>PM</b> • 1 complete application self-reliant (to be evaluated by <b>PM</b> ) • 3 initial assessments of the production site under the direction of the <b>PM</b> • 1 initial assessment of the production site self-reliant (witnessed by <b>PM</b> ) <b>SAS</b> • 5 inspection visits together with a qualified <b>SAS</b> • 3 inspection visits conducted self-reliant (witnessed by <b>PM</b> )
Skills in performing witnessing	<b>PM</b> Internal training witness testing

Legenda:

- Certification assessor (**CAS**)
- Decision maker (**DM**)
- Product manager (**PM**)
- Site assessor (**SAS**)

### 11.2.2 Qualification

The qualification of the Certification staff shall be demonstrated by means of assessing the education and experience to the above-mentioned requirements. In case staff is to be qualified based on deflecting criteria, written records shall be kept.

The authority to qualify staff rests with the:

- **PM:** qualification of **CAS** and **SAS**;
- management of the certification body: qualification of **DM**.

### **11.3 Report initial investigation**

The certification body records the results of the initial investigation in a report.

This report shall comply with the following requirements:

- completeness: the report provides a verdict about all requirements included in the evaluation guideline;
- traceability: the findings on which the verdicts have been based shall be recorded and traceable;
- basis for decision: the **DM** shall be able to base his decision on the findings included in the report.

### **11.4 Decision for granting the certificate**

The decision for granting the certificate shall be made by a qualified Decision maker which has not been involved in the pre-certification tests. The decision shall be recorded in a traceable manner.

### **11.5 Layout of quality declaration**

The product certificate shall be in accordance with the model included in the Annex.

### **11.6 Nature and frequency of third party audits**

The certification body shall carry out surveillance audits on site at the supplier at regular intervals to check whether the supplier complies with his obligations. The Board of Experts decides on the frequency of audits.

At the time this certification scheme entered into force, the frequency of audits amounts of 1 audit on site per year for suppliers.

The results of each audit shall be recorded by Kiwa in a traceable manner in a report.

### **11.7 Non conformities**

When the certification requirements are not met, measures are taken by Kiwa in accordance with the sanctions policy as written in the Kiwa Regulation for Certification.

The Sanctions Policy is available through the "News and Publications" page on the Kiwa website ["Kiwa Regulation for Certification"](#).

### **11.8 Report to the Board of Experts**

The certification body shall report annually about the performed certification activities. In this report the following aspects are included:

- mutations in number of issued certificates (granted/withdrawn);
- number of executed audits in relation to the required minimum;
- results of the inspections;
- required measures for established Non-Conformities;
- received complaints about certified products.

### **11.9 Interpretation of requirements**

The Board of Experts may record the interpretation of requirements of this evaluation guideline in one separate interpretation document.

### **11.10 Specific rules set by the Board of Experts**

The Board of Experts the following specific rules have been defined. These rules shall be followed by the certification body.



# 12 Titles of standards

## 12.1 Public law rules

Not applicable

## 12.2 Standards / normative documents

Number	Title	Version*
ISO/IEC 17020	Conformity assessment - General criteria for the operation of various types of bodies performing inspection	
ISO/IEC 17021	Conformity assessment - Requirements for bodies providing audit and certification of management systems	
ISO/IEC 17024	Conformity assessment - General requirements for bodies operating certification of persons	
ISO/IEC 17025	General requirements for the competence of testing and calibration laboratories	
ISO/IEC 17065	Conformity assessment - Requirements for bodies certifying products, processes and services	
EN 54-13	Fire detection and fire alarm systems - Part 13: Compatibility and connectability assessment of system components	2017
EN 54-4	Fire detection and fire alarm systems - Part 4: Power supply equipment	1999/A2:2006
EN 16763	Services for fire safety systems and security systems	2017
IEC 60839-5-1	Alarm and electronic security systems – Part 5-1: Alarm transmission systems – General requirements	2014
EN 50136-1/A1	Alarm systems - Alarm transmission systems and equipment - Part 1: General requirements for alarm transmission systems	2012 +2018
EN 50136-3	Alarm systems - Alarm transmission systems and equipment - Part 3: Requirements for Receiving Centre Transceiver (RCT)	2013
EN50518	Monitoring & Alarm Receiving Centre	2019
EN50131-1	Alarm systems - Intrusion and hold-up systems - Part 1: System requirements	2006
K21030	Certification of Alarm Transmission Service Providers	2020
K21048	Secure Remote Access of Alarm Systems for Remote Services / handling	2019
NEN 2575-4	Fire safety of buildings – Evacuation alarm installations – System and quality requirements and guidelines for locating of alarm devices – Part 4: Wireless silent alarm installation	2013
DIN 14675-1	Fire detection and fire alarm systems – Design and operation	2020
NPR 2576	Circuit integrity under fire conditions - Guideline for transmission paths	2018

\*) When no date of issue has been indicated, the latest version of the document is applicable.

## I Model certificate (example)

	<b>Product certificate</b> <b>KXXXXXXX/0X</b>	
	Issued	
	Replaces	
	Page	1 of 1
<b>CERTIFICATE</b>	<b>Name product</b>	
	<b>STATEMENT BY KIWA</b> With this product certificate, issued in accordance with the Kiwa Regulations for Certification, Kiwa declares that legitimate confidence exists that the products supplied by	
	<b>Name customer</b> as specified in this product certificate and marked with the Kiwa®-mark in the manner as indicated in this product certificate may, on delivery, be relied upon to comply with Kiwa evaluation guideline BRL-xxxx "xxxxxxxxxxxxxxxxxxxxxxxxxxxx" <b>dated [dd-mm-yyyy]</b> inclusive amendment sheet dated dd-mm-yyyy.	
	 Luc Leroy Kiwa	
	<i>Publication of this certificate is allowed. Advice: consult <a href="http://www.kiwa.nl">www.kiwa.nl</a> in order to ensure that this certificate is still valid.</i>	
<b>Kiwa Nederland B.V.</b> Sir Winston Churchilllaan 273 P.O.Box 70 2280 AB RUSWIJK The Netherlands Tel. +31 88 998 44 00 Fax +31 88 998 44 20 <a href="mailto:info@kiwa.nl">info@kiwa.nl</a> <a href="http://www.kiwa.nl">www.kiwa.nl</a>	<b>Company</b> Name customer Address customer  <b>Phone number</b> <b>Fax number</b> <b>www.</b> <b>Email</b>	<div><b>Certification process</b> consists of initial and regular assessment of:<ul style="list-style-type: none"><li>• quality system</li><li>• product</li></ul></div>
	140410	

## II Model IQC-scheme manufacturer (example)

Inspection subjects	Inspection aspects	Inspection method	Inspection frequency	Inspection registration
Base materials or materials supplied: - recipe sheets  - incoming goods inspection base materials				
Production process, production equipment, plant: - procedures - working instructions - equipment - release of product				
Finished products				
Measuring and testing equipment - measuring equipment  - calibration				
Logistics - internal transport - storage - preservation  - packaging - identification				