# Interpretation document

Wireless Silent Alarm Systems

**Approved by the Board of Experts Fire Safety**

**02/04/2021**

Trust
Quality
Progress

# Contents



**Version History**

| Version | Change | Date |
|---|---|---|
| 1 | First setup of the document | 2021/04/02 |
| 2 | Additional case study (no. 4) | 2022/03/17 |
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# 1 Introduction

This interpretation document applies to the international Certification Scheme K21047 for Wireless Silent Alarm Systems based on international standards for Inspection & Certification. This document has been accepted by the Board of Experts Fire Safety, in which all relevant parties in the field of Fire Safety are represented. The Board of Experts also supervises the activities and when necessary require this scope to be revised and determine when additional interpretation is needed.

Technological developments do not wait for laws, regulations and standards. These laws, regulations and standards are following the developments. This "Interpretation document" embodies the technological and market developments. The purpose of this document is to clarify the context by drawing up new definitions on certain themes and subjects. This clarifies to persons and market parties what the preconditions are when determining compliance with the applicable requirements. It also explains developments that play at the level of standards and how they fit the developments in the market and are in line with legislation and regulations.

This interpretation document has been drafted to set two goals:

- To give guidance in the context for the design, installation and operation of systems and is marked with the letter “G”;
- To give additional or alternative requirements on matters no clear defined in the standards or where the standards have not yet addressed the issue or development and is marked with the letter “R”.

# 2 Case studies (G)

Specific case studies give guidance towards possible solutions.

Below are case studies shown that are not a standard requirement, but are detailing the translation of the functional and performance requirements in a possible solution.

| Input | Output |
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| 1.<br>The dB references values for example 4G and WIFI are strict in some cases. | The two transmission paths within the building should meet or exceed the qualification “fair”, according to the following industrial references:<br>• WIFI: Best dBm Values for Wifi (randomsolutions.nl)<br>• Mobile: Mobile Signal Strength Recommendations - Teltonika Networks Wiki (teltonika-networks.com)<br><br>If the second path does not meet the minimum requirements, the system should nevertheless works at the location with the worst coverage. This has to be inspected initially and during surveillance. A fallback from 4G to 2G is allowed if the system has a redundancy with data of Public Telecom networks systems. If there is no response through the app, the system should automatically alert the recipient by telephone. |
| 2.<br>Applying redundant WIFI networks in places where coverage is poor or worse for Public Telecom networks systems. | The scheme refers to the EN50136-1 / A1 standard, using the following principles:<br>• Diverse technology; 2.2.22 in the scheme;<br>• Dual path Alarm Transmission Systems; 2.2.21 in the scheme.<br><br>So when using a double WIFI network, the above criteria functional shall be met.<br>If this choice is the solutions for a specific situation has been made, it shall in any case have to be established that it concerns two different networks with their own endpoints and power supply.<br><br>In these cases, NPR2576 can be applied for obtaining Circuit integrity. |
| 3.<br>Applying redundant Public Telecom networks in places where coverage is poor or worse for WIFI. | The scheme refers to the EN50136-1 / A1 standard, using the following principles:<br>• Diverse technology; 2.2.22 in the scheme;<br>• Dual path Alarm Transmission Systems; 2.2.21 in the scheme.<br><br>So when using a redundant Public Telecom network, the above criteria shall be met. The use of a second SIM card from a different Public Telecom provider is then the solution.<br>If this choice is the solutions for a specific situation has been made, it shall in any case have to be established that it concerns two different telecom providers, each with their own network and infrastructure (antennas). If the providers use the same antenna structure, it shall be established that another antennas are present in the vicinity that shall follow-up the signal transmission to a sufficient extent if the first antenna structure fails. |

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| 4.<br>Distinction between indoor and outdoor coverage | The minimal requirements for the availability (redundancy) of the WSAS transmission paths (2G - 5G and WIFI) is intended for inside the buildings on a site. If the WSAS use is intended for large sites with multiple buildings, there is a demarcation between indoor and outdoor areas.<br>The outdoor areas availability of transmission paths is optional.<br><br>If the basic engineering plan has additional requirements on top of the minimal requirements for communication with staff on the outdoor aeras because to alarm extra help for the evacuation should this be clearly defined in the basic engineering plan with the reason why.<br>The plan should also define the minimal availability requirements for the outdoor areas and what the minimal performance should be of this extra help in context of the requirements of the inside evacuation. |