BS EN 50518-2:2013

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Monitoring and alarm receiving centre -

Part 2: Technical requirements

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National foreword

This British Standard is the UK implementation of EN 50518-2:2013. It supersedes BS EN 50518-2:2010, which is withdrawn.

Relationship with other publications

The BS EN 50518 series of standards apply to alarm signals generated from intruder and hold-up alarm systems (I&HAS) only. Alarm signals from other types of alarm systems, i.e. fire, social and closed circuit television systems (CCTV) are not within the scope of the BS EN 50518 series.

British Standard BS 5979:2007 applies to I&HAS, but also other alarms such as CCTV, fire and social.

Following publication of the BS EN 50518 series, BS 5979:2007 was reviewed to remove references to alarm signals received from I&HAS resulting in the development of a new standard BS 8591:2014.

British Standard BS 8591:2014, *Remote centres receiving signals from alarm systems – Code of practice*, gives recommendations for the planning, construction, and facilities of manned and unmanned remote centres, and for the operation of alarm receiving centres (ARCs), receiving signals from alarm systems, e.g. CCTV, fire, social, lone worker and vehicle tracking, but excludes receiving signals from I&HAS.

Together with BS 8591:2014, BS EN 50518-1:2013 and BS EN 50518-3:2013 it supersedes BS 5979:2007, which is withdrawn.

For those considering constructing and operating an ARC in compliance with this standard it is worth noting that following a meeting of CEN/TC 79 in September 2013 a resolution was passed to commence work on EN 50518, to, amongst other things, merge the three parts into one and to extend the scope to include alarms signals from other systems such as CCTV, fire and social.

The UK participation in its preparation was entrusted by Technical Committee GW/1, Electronic security systems to Subcommittee, GW/1/11, Remote centres.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Contents

Page

Foreword 3

Introduction 4

1 Scope 5

2 Normative references 5

3 Terms, definitions and abbreviations 5
3.1 Terms and definitions 5
3.2 Abbreviations 6

4 Performance requirements 6

5 Communication requirements 8

6 Reception of signals 8
6.1 General requirements 8
6.2 Operator actions 8

7 Testing 8
7.1 General 8
7.2 Daily tests 8
7.3 Weekly tests 9
7.4 Fault procedures and reporting 9

8 Data 9
8.1 General 9
8.2 Client data 9
8.3 Data of ARC external communications 9
8.4 Log of operator actions 10

9 Data storage 10

10 Availability and verification of performance of the ARC 10

11 Contingency plan 10
11.1 General 10
11.2 Abnormal occurrence examples 10

Annex A (normative) **ARC availability calculations** 12

Bibliography 14

Figure

Figure 1 — Sequence of operations 7

Foreword

This document (EN 50518-2:2013) has been prepared by CLC/TC 79 "Alarm systems".

The following dates are fixed:

• latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2014-10-07
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2016-10-07

This document supersedes EN 50518-2:2010.

EN 50518-2:2013 includes the following significant technical changes with respect to EN 50518-2:2010.

– There was no mandatory connection for certification between the three parts of the standard with the result that it could be possible to certify only against one or two of the three parts of the standard, which is clearly not the purpose of the WG. This is solved by adding a sentence "*This part of EN 50518 is to be read in conjunction with Part 1 and Part 3, and cannot be used separately.*" to the foreword.

– The scope is limited to intruder and hold-up alarm systems.

– All normative references are updated.

– Corrigendum AC:2011 is included, and event 1 of Annex A is removed.

EN 50518 consists of the following parts under the generic title "*Monitoring and alarm receiving centre"*:

— *Part 1: Location and construction requirements;*

— *Part 2: Technical requirements;*

— *Part 3: Procedures and requirements for operation.*

This part of EN 50518 is to be read in conjunction with Part 1 and Part 3, and cannot be used separately.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

Introduction

This European Standard applies to all Monitoring and Alarm Receiving Centres (MARCs) that monitor and/or receive and/or process signals that require an emergency response.

In all existing EN 50131 series accomplished under CLC/TC 79 "Alarm systems", the abbreviation ARC is used. To avoid confusion and to achieve consistency in terminology the abbreviation ARC will be used throughout this European Standard, where MARC is equivalent for ARC.

It is noted that this European Standard cannot supersede any legislative requirements deemed necessary by a National Government to control the security sector on a national basis. This European Standard cannot interfere with items that are regulated by (inter)national regulations concerning external services (e.g. water, wastewater, fuel supplies, gas, oil and mains power supplies).

1 Scope

This part of EN 50518 specifies the technical requirements of an ARC. This also includes functional performance criteria and verification of performance.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 50131-1, *Alarm systems – Intrusion and hold-up systems – Part 1: System requirements*

EN 50136-1, *Alarm systems – Alarm transmission systems and equipment – Part 1: General requirements for alarm transmission systems*

EN 50518-1, *Monitoring and alarm receiving centre – Part 1: Location and construction requirements*

EN 50518-3, *Monitoring and alarm receiving centre – Part 3: Procedures and requirements for operation*

3 Terms, definitions and abbreviations

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 50518-1:2013 and the following apply.

3.1.1
alarm transmission equipment
collective term to describe SPT, MCT and RCT

[SOURCE: EN 50136-1:2012, 4.1.4]

3.1.2
alarm transmission system
ATE and networks used to transfer information concerned with the state of one or more ASs to the AE of one more ARCs

Note 1 to entry: An ATS may consist of ATPs of different classes, e.g. for use in so called "dual path systems".

[SOURCE: EN 50136-1:2012, 4.1.8, modified]

3.1.3
annunciation equipment
equipment located at an ARC which displays the alarm status, or the changed alarm status of ASs in response to the receipt of incoming alarm messages

Note 1 to entry: The AE is not part of the ATS.

[SOURCE: EN 50136-1:2012, 4.1.12, modified]

3.1.4
ARC operator
person responsible for the handling of messages presented at the AE

[SOURCE: CLC/TS 50136-4:2004, 3.3, modified]

3.1.5
external communication
all inbound and outbound communication with the ARC

Note 1 to entry: Communication includes all information relevant for the functioning of the ARC such as fax, written information, audio, all CCTV and other electronic data but excludes alarm signals.

3.1.6
receiving centre transceiver
ATE at the ARC including the interface to the AE and the interface to one or more transmission networks and being Part of an ATP

Note 1 to entry: In some systems, this transceiver may be able to indicate changes of the status of an AS and to store log-files. This may be needed to increase the system availability in case of AE failure.

[SOURCE: EN 50136-1:2012, 4.1.28, modified]

3.1.7
signal
variable parameters by which information is conveyed

[SOURCE: EN 50131-1:2006, 3.1.60]

3.1.8
user
person authorised by the client to operate a(n) (alarm) system

[SOURCE: EN 50131-1:2006, 3.1.80, modified]

3.2 Abbreviations

For the purposes of this document, the abbreviations given in EN 50518-1:2013 and the following apply.

ATE Alarm Transmission Equipment

I&HAS Intrusion and Hold-up Alarm System(s)

MCT Monitoring Centre Transceiver

RCT Receiving Centre Transceiver

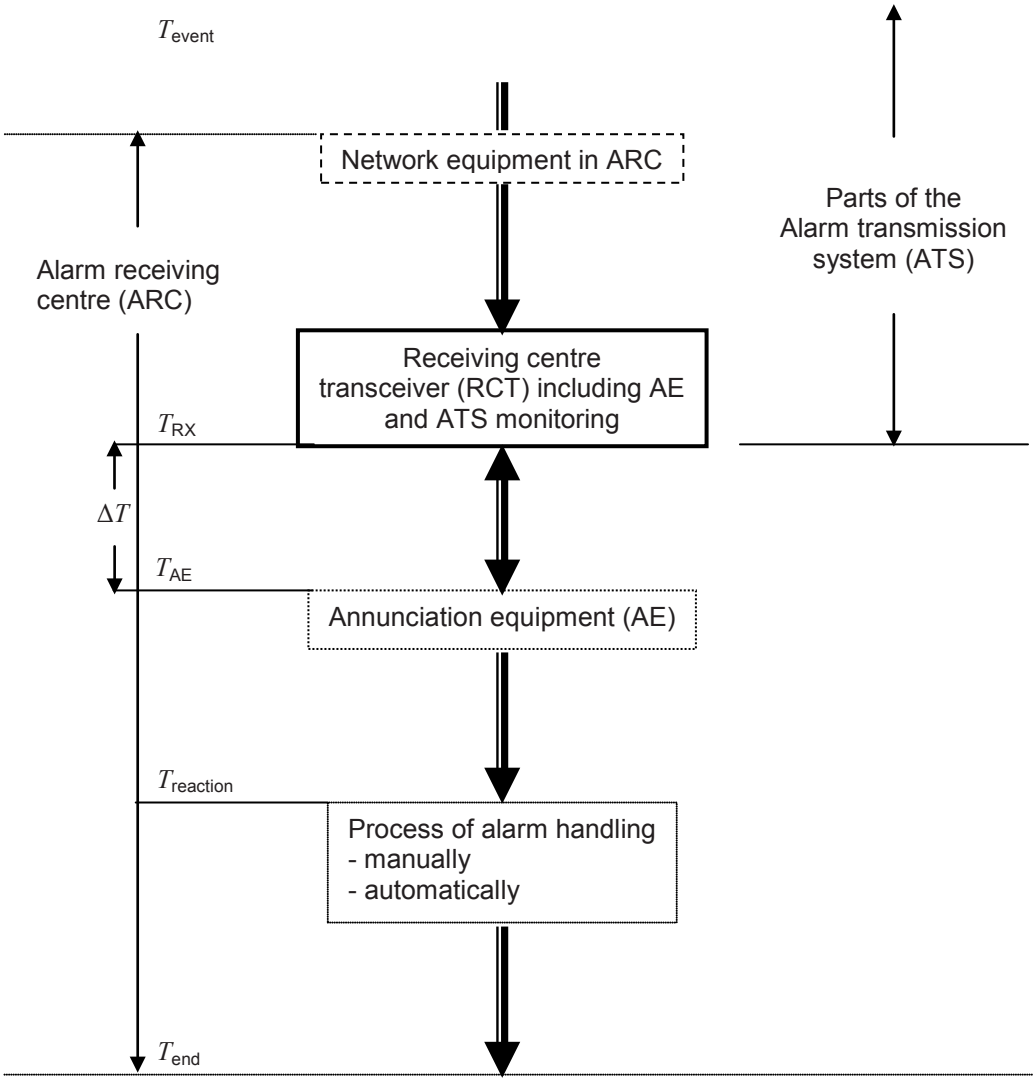
SPT Supervised Premises Transceiver

4 Performance requirements

Figure 1 shows the sequence of operations under ARC responsibility applicable for any signal generated by the I&HAS after completion of processing by the RCT. This shall be interpreted together with EN 50136-1:2012, Figure 1:

— EN 50131-1 and EN 50136-1 apply from T_{event} to T_{RX};

— this European Standard applies from T_{RX} to T_{end}.



Key

T_{event} time of event start

T_{RX} time of delivery of the output signal from RCT into the AE

ΔT time elapsing between the moment of availability of the alarm signal at the output of the RCT and the acceptance of the alarm signal by AE

T_{AE} time of signals received at the AE

$T_{reaction}$ time operator action starts

T_{end} time operator action completed

Figure 1 — Sequence of operations

Alarm receiving equipment and resources shall provide the following performance.

The time between T_{RX} and $T_{reaction}$ shall meet the following performance criteria:

— for hold-up alarm conditions: 30 s for 80 % of signals received and 60 s for 98,5 % of signals received;

— all other alarm conditions: 90 s for 80 % of signals received and 180 s for 98,5 % of signals received.

Conformance to above criteria shall be achieved over a rolling twelve-month period.

5 Communication requirements

The following shall be provided:

— equipment within the ARC such that external communication are automatically recorded with the time and date and shall be capable of being retrieved, displayed/replayed and retained for a minimum period of three months;

— equipment used as a means of communicating across the entrance lobby.

6 Reception of signals

6.1 General requirements

Each signal received shall be separately identifiable at the ARC and shall be recorded automatically, giving the following information:

— supervised premises identification;

— type of signal;

— date and time of receipt of signal.

6.2 Operator actions

Where operator's action is required, the details of actions taken shall be recorded, including the date and time of completion and the identity of the operator(s) that performed and completed those actions. Where automatic action is taken, it shall be recorded.

7 Testing

7.1 General

Documented procedures shall exist for the regular testing of all equipment required for the operation of the ARC; equipment having internal clocks shall be synchronised with the World Time Clock at least every 24 h.

NOTE World Time Clock is a universal time-keeping utility providing the most accurate time by synchronising with atomic time servers and displaying local time and date in any location around the world.

7.2 Daily tests

The following equipment shall be checked for correct functioning on a daily basis and the results recorded:

— alarm receiving equipment (RCT);

— annunciation equipment (AE);

— communications systems (see Clause 5);

— all incoming and outgoing communication lines.

7.3 Weekly tests

The following equipment shall be checked for correct functioning on a weekly basis and the results recorded:

— alarm systems of the ARC, see EN 50518-1:2013, Clause 6;

— electrical power supplies, see EN 50518-1:2013, Clause 7;

— emergency lighting equipment.

7.4 Fault procedures and reporting

Any item of equipment involved in the receipt, display or onward transmission of an alarm signal, including power supplies, shall have a standby facility and procedure that can be brought into use either automatically or by an ARC operator within 1 h from the moment the existence of the fault becomes known to the operator.

A documented procedure shall exist for the repair of failed equipment mentioned in 7.2 and 7.3. This procedure shall include a time frame for the commencement of the fault report, which shall not exceed 15 min of discovery.

8 Data

8.1 General

Attention is drawn to the European Data Protection Act.

The following categories of data are required:

— client data;

— data of ARC external communications;

— log of operator actions.

8.2 Client data

The data for each alarm system connected to the ARC shall be available to operators and shall include:

— name, address and telephone contact number(s) of supervised premises;

— premises reference number and any special arrangements;

— name, address and telephone(s) numbers of users;

— actions to be taken when an alarm occurs;

— agreed setting and un-setting times where appropriate.

8.3 Data of ARC external communications

All data of external communications shall be recorded in a retrievable format.

8.4 Log of operator actions

A log shall be maintained recording the actions of the operator(s).

The log shall contain details of all the routine testing, maintenance and emergency servicing to ARC equipment.

9 Data storage

All client data shall be retained for a minimum period of two years.

All data of ARC external communications shall be retained for a minimum period of three months.

A log of operator actions shall be retained for a minimum period of two years.

10 Availability and verification of performance of the ARC

In determining that the overall performance of the alarm system conforms with EN 50131-1 and EN 50136-1, the monthly availability of the ARC shall be expressed in the percentage of time that the ARC, including all its functional parts, is functioning in accordance with this European Standard.

The ARC shall adhere to the availability percentages as outlined in EN 50136-1 for alarm transmission systems in respect of signals processed.

The availability of the ARC in the percentage as formulated above shall be subjected to the verification of performance procedures according to Annex A.

11 Contingency plan

11.1 General

In the event of an ARC being put out of action, there shall be a documented contingency plan for dealing with the aftermath. The contingency plan shall cater for any reasonably foreseeable abnormal occurrence with the potential to cause degradation of service at an ARC. The actions to be taken shall be clearly defined, covering technical and/or other emergencies. The contingency plan shall include:

— contact details of contractors and service providers able to undertake reinstatement whilst the service is maintained;

— the means by which services will be continued or restored;

— a review of the contingency plan of not more than six months, performed by the management, which shall document and outline any corrective actions.

11.2 Abnormal occurrence examples

Examples of abnormal occurrences that shall be considered when writing the contingency plan include:

— complete failure of processing capability;

— faults in, or damage to, site utilities, communications equipment or communications circuits;

— fire, including exposure to fire in adjoining and adjacent properties;

— flood or other water incursion;

— storm and lightning damage, including lightning induced over-voltages carried on public electricity supplies and telephone lines;

— vehicle impact, including rail vehicles and aircraft;

— malicious damage;

— criminal attack, bomb threats or other duress situations.

Annex A
(normative)

ARC availability calculations

For each occasion where a single technical requirement is unavailable, the duration of each single fault shall be determined and a fault time calculated as follows:

$$FT = (DF + TR) \text{ min}$$

where

FT is the fault time, expressed in minutes;

DF is the duration of a single fault, expressed in minutes;

TR is the maximum fault reporting time for the appropriate category, expressed in minutes.

For each month, the availability of the ARC shall be calculated as:

$$MA = \left(1 - \frac{SF}{43\,800}\right) \times 100\,\%$$

where

MA is the monthly availability, expressed in percent;

SF is the sum of fault times in any 30 days period, expressed in minutes.

NOTE 43 800 is the average number of minutes in one month (excluding leap years), e.g. (365 × 24 × 60)/12.

The sum of fault times shall be for all faults cleared during a month occurring in the following technical requirements of the ARC:

— communication, see Clause 5;

— reception of signals, see Clause 6;

— testing, see 7.2 and 7.3.

Example of a calculation of the monthly ARC availability:

- Event 1 at day 18: External communication is interrupted for 4 h and repaired after 4 min.
- Event 2 at day 22: Malfunction of two annunciation devices. They had to be substituted. The down time from the beginning of the interruption until normal operation lasted 30 min. During this time, the functioning annunciation equipment was overloaded so that the performance requirements for alarm receiving equipment could not be redeemed (see Clause 4).

$$FT_1 = (4 \times 60 + 4) = 244 \text{ min}$$

$$FT_2 = (4 \times 30) = 120 \text{ min}$$

$$SF = 244 + 120 = 364 \text{ min}$$

$$MA = \left(1 - \frac{364}{43\,800}\right) \times 100 = 99{,}17\,\%$$

The hold-up alarm conditions decreased to 120 s for 100 % of signals received and the other alarm conditions decreased to 300 s for 100 % of signals received during this time. The ARC shall adhere to the availability percentages as outlined in EN 50136-1 for alarm transmission systems in respect of signals processed.

Bibliography

CLC/TS 50136-4, *Alarm systems – Alarm transmission systems and equipment – Part 4: Annunciation equipment used in alarm receiving centres*

EN 50131 (all parts), *Alarm systems – Intrusion and hold-up systems*

EN 50136 (all parts), *Alarm systems – Alarm transmission systems and equipment*

Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data, *Official Journal L 281, 23/11/1995 P. 0031 – 0050*

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