

English version

**Alarm systems -
Combined and integrated alarm systems -
General requirements**

Systemes d'alarme -
Systemes d'alarme combinés et intégrés -
Règles générales

Alarmanlagen -
Kombinierte und integrierte Alarmanlagen
-
Allgemeine Anforderungen

This draft Technical Specification is submitted to CENELEC members for vote by correspondence
Deadline for CENELEC: 2008-10-31.

It has been drawn up by CLC/TC 79.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Warning : This document is not a Technical Specification. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a Technical Specification.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

1

Foreword

2 This draft Technical Specification was prepared by the Technical Committee CENELEC TC 79, Alarm
3 systems.

4 It is circulated for voting in accordance with the Internal Regulations, Part 2, Subclause 11.3.3.3.

5 This document will supersede CLC/TS 50398:2002.

6 The following date is proposed:

- latest date by which the existence of the CLC/TS
has to be announced at national level

(doa) dor + 6 months

7

8

Draft for Vote

9

Contents

10	Introduction	5
11	1 Scope	6
12	2 Normative references	6
13	3 Definitions	6
14	4 General description and fundamental principles	9
15	4.1 General	9
16	4.2 Standards.....	9
17	4.3 Configuration types of integrated alarm systems	9
18	5 System requirements and compatibility assessment	14
19	5.1 Standards.....	14
20	5.2 General design.....	14
21	5.3 Common facility for control	15
22	5.4 Common facility for indication.....	15
23	5.5 Processing in alarm standard required processing elements.....	16
24	5.6 Connection to alarm transmission system	16
25	5.7 Interconnection rules.....	17
26	5.8 Power supplies.....	17
27	5.9 Timing requirements	17
28	5.10 Simultaneous occurrence of events.....	17
29	5.11 Verification of performance.....	17
30	5.12 Central control facilities.....	18
31	Annex A (informative) Application and installation guidelines and responsibilities	20

32

33 **Figures**

34 Figure 1 – First example of type 1 configuration10

35 Figure 2 – Second example of type 1 configuration Class 1 CCF10

36 Figure 3 – Third example of type 1 configuration Class 2 CCF11

37 Figure 4 – First example of type 2 configuration11

38 Figure 5 – Second example of type 2 configuration12

39 Figure 6 – Third example of type 2 configuration12

40 Figure 7 – Fourth example of type 2 configuration13

41 Figure 8 – Fifth example of type 2 configuration13

42

Draft for Vote

43 **Introduction**

44 This Technical Specification describes the general requirements and configuration types for combined
45 and integrated alarm systems which shall apply when one or more of the applications being integrated
46 is an alarm application.

47 The prime considerations of this Technical Specification are to ensure that the individual standards are
48 applied when they form a part of an integrated system solution with each other or with other (specified
49 or unspecified) applications.

50 This document provides additional information relating to initial system design, planning, installation,
51 commissioning, operation and maintenance for such combined and integrated alarm systems.

Draft for Vot

52 1 Scope

53 This Technical Specification specifies the requirements for alarm systems combined and integrated
54 with other systems which may or may not be alarm systems.

55 This Technical Specification defines requirements, related to the rules of integration, in order to
56 complement the individual alarm application standards and to provide clarification where there is conflict.

57 Alarm transmission systems are excluded from the scope of this Technical Specification.

58 2 Normative references

59 The following referenced documents are indispensable for the application of this document. For dated
60 references, only the edition cited applies. For undated references, the latest edition of the referenced
61 document (including any amendments) applies.

62 EN 54 series, *Fire detection and fire alarm systems*

63 EN 50130 series, *Alarm systems*

64 EN 50131 series, *Alarm systems – Intrusion and hold-up systems*

65 EN 50132 series, *Alarm systems – CCTV surveillance systems for use in security applications*

66 EN 50133 series, *Alarm systems – Access control systems for use in security applications*

67 EN 50134 series, *Alarm systems – Social alarm systems*

68 EN 50136 series, *Alarm systems – Alarm transmission systems*

69 EN 60073:2002, *Basic and safety principles for man-machine interface, marking and identification -*
70 *Coding principles for indicators and actuators* (IEC 60073:2002)

71 3 Definitions

72 For the purposes of this document, the following terms and definitions apply.

73 3.1 74 additional facility

75 facility which is not described in an application standard and not necessary to fulfil the functions
76 required of that application standard

77 NOTE 1 An additional facility may be shared by two or more applications. In this case this facility may be an additional facility
78 for one application but standard-required for another application.

79 NOTE 2 For an application where no standard exists, any facility of this application is considered as additional.

80 3.2 81 alarm

82 warning of the presence of a hazard to life, property or the environment

83 3.3 84 alarm application

85 application intended for the protection of life, property or the environment, such as

- 86 – intrusion and hold-up alarm,
- 87 – social alarm,
- 88 – environmental alarm,
- 89 – closed circuit television used for security and surveillance,
- 90 – access control,
- 91 – fire detection, fire alarm and fire protection systems

92 NOTE This list may be extended, to follow the scope of CLC/TC 79 and CEN/TC 72.

- 93 **3.4**
94 **alarm receiving centre**
95 continuously manned centre to which information concerning the status of one or more alarm systems
96 is reported
- 97 **3.5**
98 **alarm company**
99 organization which provides services for alarm systems
- 100 **3.6**
101 **alarm condition**
102 condition of an alarm system, or part thereof, which results from the response of the system to the
103 presence of a hazard
- 104 **3.7**
105 **alarm system**
106 electrical installation which responds to the manual or automatic detection of the presence of a hazard
- 107 **3.8**
108 **alarm transmission equipment**
109 equipment which is used primarily for the transmission of alarms from the alarm system interface at
110 the supervised premises to the annunciation equipment interface at the alarm receiving centre. It may
111 also transmit information or commands from the alarm receiving centre to one or more alarm systems
- 112 NOTE This does not include equipment provided by a PTT (Public and Private Telephone Transmission) or other general
113 telecommunications equipment (for example modems) where these are used primarily for alarm transmission.
- 114 **3.9**
115 **alarm transmission system**
116 equipment and network used to transfer information concerned with the state of one or more alarm
117 systems to one or more alarm receiving centres
- 118 **3.10**
119 **application**
120 all related facilities used for a specific purpose, such as the detection and warning in the event of fire,
121 lighting control etc.
- 122 **3.11**
123 **application standard**
124 standard related to a specific application
- 125 **3.12**
126 **central control facility – CCF**
127 equipment used for control and/or indicating purposes in type 1 configuration, which is connected to
128 one or more dedicated systems and which is normally manned by operating personnel, for example a
129 computer at a supervised location. The CCF is an additional facility (and not the standard-required
130 control and indicating equipment) for at least one of the applications
- 131 **3.13**
132 **combined and integrated alarm system**
133 in this document, the wording 'combined and integrated alarm system' is synonymous with 'integrated
134 alarm system'; which will mostly be used in the document
- 135 **3.14**
136 **command signal**
137 instruction or command that affects one or more systems
- 138 **3.15**
139 **common device**
140 device which is shared by two or more applications

- 141 **3.16**
142 **common facility**
143 facility which is shared by two or more applications
- 144 NOTE A common facility may be additional for two or more applications, it may be standard-required for two or more
145 applications or it may be additional for one or more applications and standard-required for other applications.
- 146 **3.17**
147 **common transmission path**
148 transmission path used by two or more applications
- 149 **3.18**
150 **dedicated device**
151 device used by a single application
- 152 **3.19**
153 **dedicated system**
154 system used for a single application
- 155 **3.20**
156 **dedicated transmission path**
157 transmission path used solely within one application
- 158 **3.21**
159 **facility**
160 hardware or software which enable a system to fulfil one or more functions, for example a
161 transmission path, a processing element, displays
- 162 **3.22**
163 **fault condition**
164 condition of a system which prevents a system or part thereof from functioning as designed
- 165 **3.23**
166 **fault signal**
167 message generated due to the presence of a fault condition
- 168 **3.24**
169 **integrated system**
170 system having common facilities used for two or more applications with at least one being an alarm
171 application
- 172 NOTE 1 The alarm transmission system is not considered as a part of an integrated alarm system.
- 173 NOTE 2 Dedicated systems only connected via a unidirectional output device without any data communications, for example
174 relay, are not considered as being part of integrated alarm systems.
- 175 **3.24**
176 **integrity**
177 ability of an application to function as designed and the measure of immunity from influences which
178 could affect correct operation
- 179 **3.25**
180 **log book**
181 record book or its electronic equivalent into which all relevant details of the system, its performance
182 and its maintenance can be entered in a relatively secure manner for later retrieval by authorised
183 organizations
- 184 **3.26**
185 **non-alarm application**
186 application intended to provide control and not intended primarily for the protection of life, property or
187 the environment, for example:
188 – heating and ventilating;
189 – energy management;
190 – building management;
191 – lighting.

192 **3.27**
193 **processing element**
194 facility to perform mathematical or logical operations on data according to programmed instructions in
195 order to obtain the required functions

196 **3.28**
197 **standard-required facility**
198 facility which is described in an application standard and necessary to fulfil the function of that
199 application standard

200 NOTE A standard-required facility may be shared by two or more applications. In this case this facility may be a standard-
201 required facility for one application but additional for another application.

202 **3.29**
203 **tamper condition**
204 condition of an alarm system in which tampering has been detected

205 **3.30**
206 **tamper detection**
207 detection of deliberate interference with an alarm system or part thereof

208 **3.31**
209 **transmission path**
210 communication route used to convey information within the integrated alarm system

211 **4 General description and fundamental principles**

212 **4.1 General**

213 Three configurations or types of integrated alarm systems are specified.

214 • Type 1 configuration is applicable for a combination and integration of dedicated standard alarm
215 systems and dedicated non-alarm systems.

216 • Type 2A configuration is applicable for the combination and integration of standard alarm systems
217 and non-alarm systems using common transmissions paths, common devices and common
218 facilities. A single fault in one application has no adverse affect on any another alarm application.
219 To achieve this redundancy is needed.

220 • Type 2B configuration is applicable for the combination and integration of standard alarm systems
221 and non alarm systems using common transmissions paths, common devices and common
222 facilities. A single fault in one application may have an adverse affect on other alarm applications.

223 **4.2 Standards**

224 For integrated alarm systems the standards relevant to each application shall apply.

225 Common facilities shall comply with all application standards for which they are standard-required. The
226 most severe integrity requirement of each of the standards shall apply.

227 The common facilities not covered by the application standards shall meet the requirements of this
228 Technical Specification.

229 Dedicated facilities have to comply with the relevant application standards (unless they are additional
230 facilities).

231 **4.3 Configuration types of integrated alarm systems**

232 **4.3.1 Type 1**

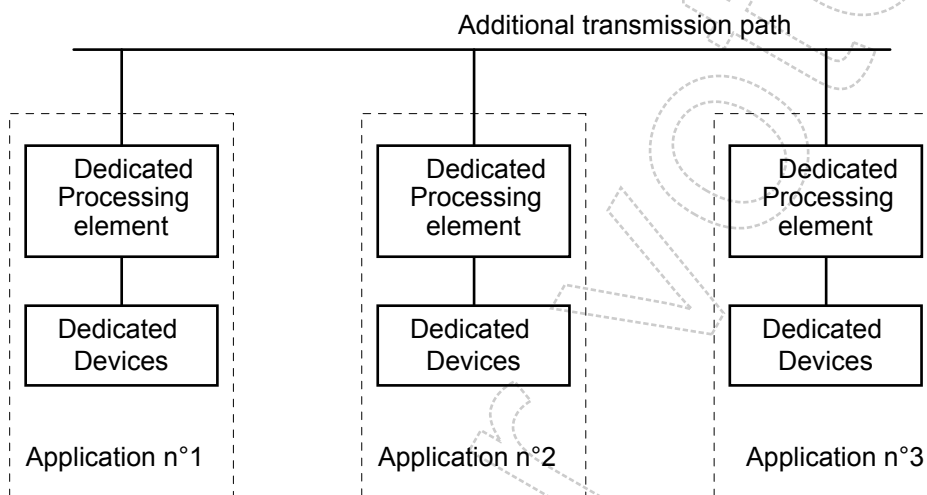
233 A type 1 configuration is a combination of two or more dedicated systems. These dedicated systems
234 are connected to common additional facilities, for example interconnected via additional transmission
235 paths.

236 In a type 1 configuration the standard-required facilities in an alarm application, in any condition, shall
 237 not be adversely affected by any other dedicated system or any additional facilities in any operating
 238 condition.

239 Examples of such configurations are given on Figures 1, 2 and 3.

240 NOTE In the examples given in this clause, the dotted lines indicate those parts of each application, which comply with their
 241 application standard, if they exist.

242

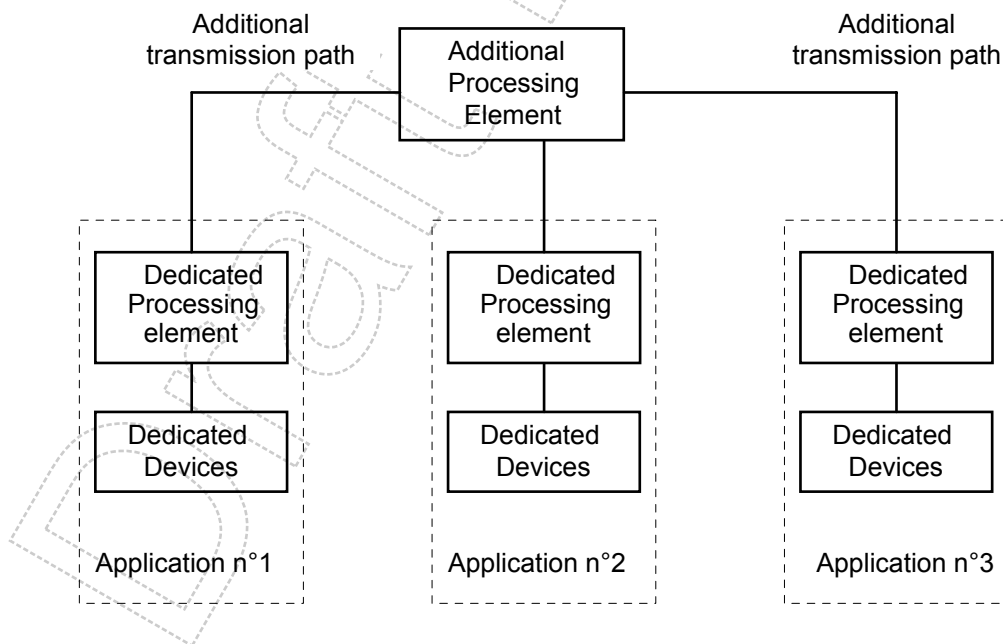


243

244

Figure 1 – First example of type 1 configuration

245



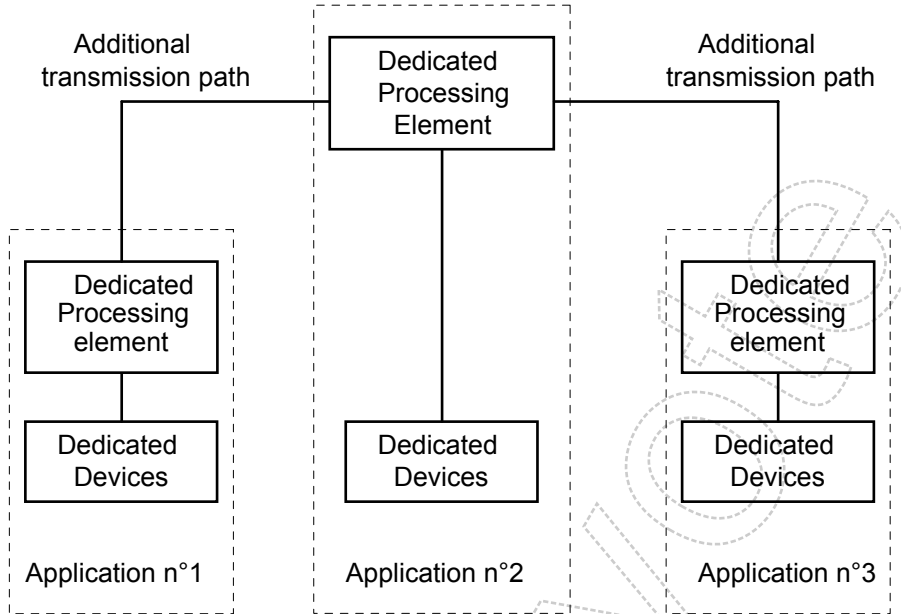
246

247

248

**Figure 2 – Second example of type 1 configuration
 Class 1 CCF**

249



250

251
252

**Figure 3 – Third example of type 1 configuration
Class 2 CCF**

253 **4.3.2 Type 2**

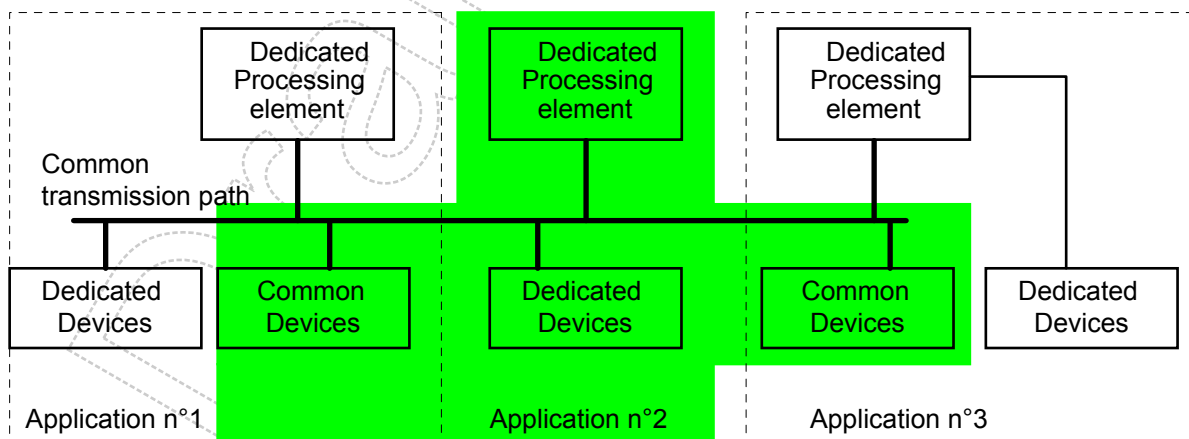
254 **4.3.2.1 General**

255 A type 2 configuration is a combination of two or more systems, all of them using a common facility
256 which is standard-required for at least one of the application.

257 Type 2 configurations are further subdivided in Type 2A and Type 2B.

258 NOTE in the examples given in this subclause, the dotted lines and shaded areas indicate those parts of each application,
259 which comply with their application standard, if they exist.

260

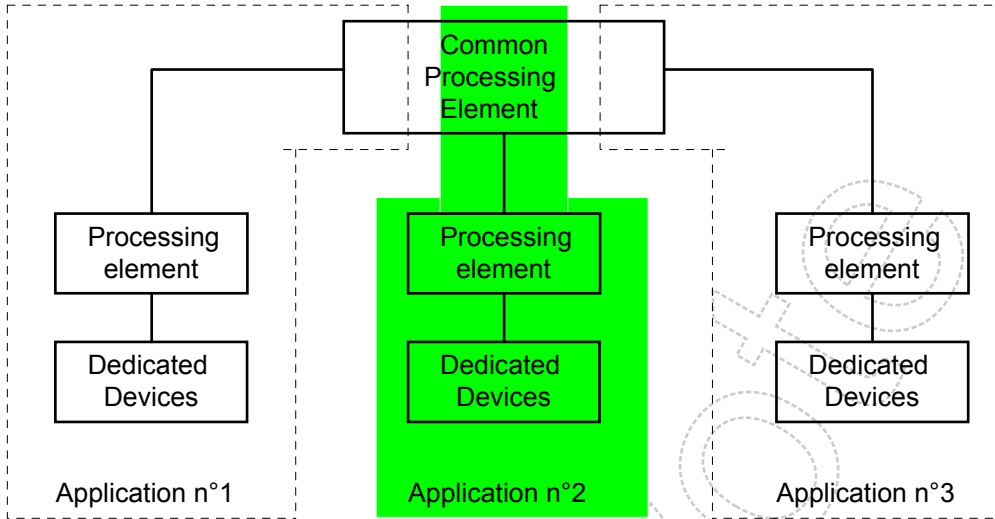


261

262

Figure 4 – First example of type 2 configuration

263

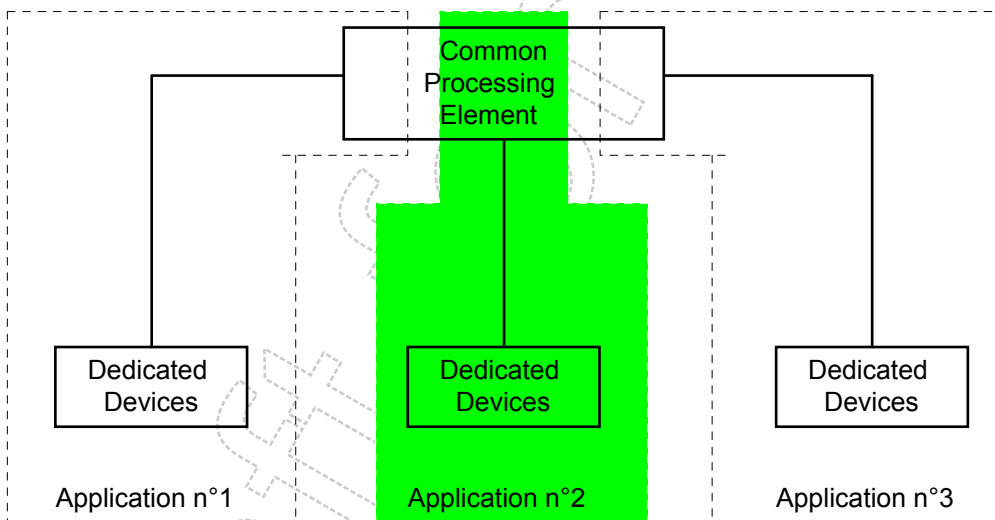


264

265

Figure 5 – Second example of type 2 configuration

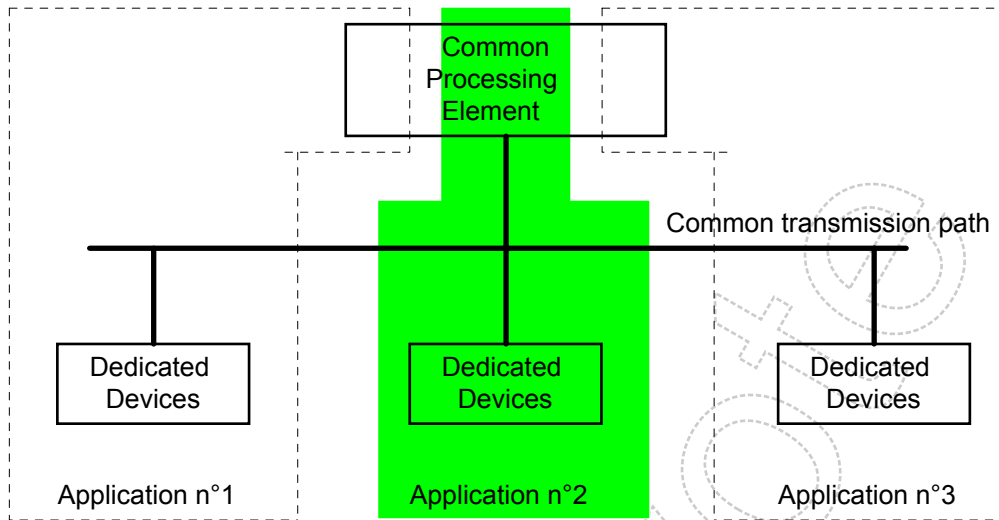
266



267

268

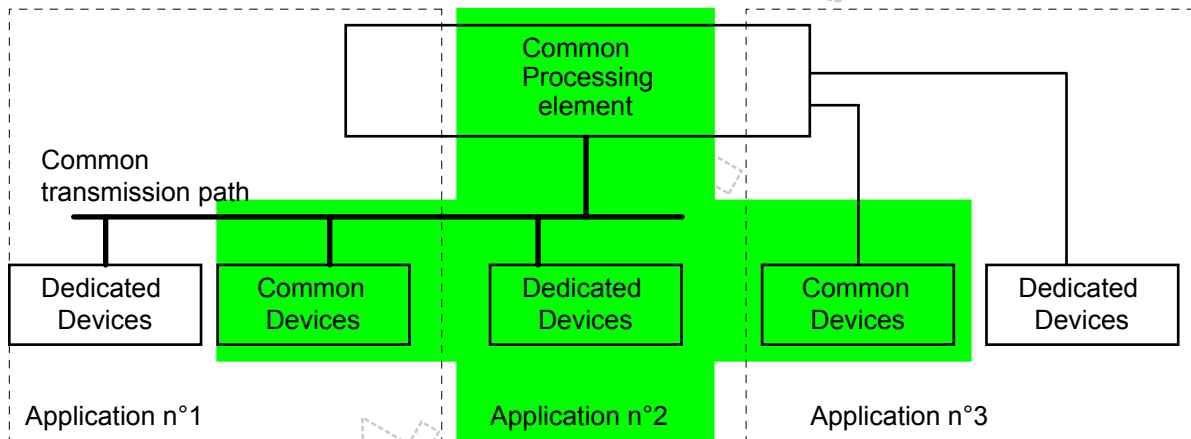
Figure 6 – Third example of type 2 configuration



269

270

Figure 7 – Fourth example of type 2 configuration



271

272

Figure 8 – Fifth example of type 2 configuration

273 **4.3.2.2 Type 2A**

274 In a type 2A configuration the integrity of any alarm standard-required facility in any one application
275 shall not be adversely affected by a single fault in another application.

276 **4.3.2.3 Type 2B**

277 In a type 2B configuration, the integrity of any alarm standard required facility in any one application
278 may be adversely affected by a single fault in another application.

279 NOTE In the given examples in this the dotted lines and the shaded areas indicate those parts of each application which
280 comply with their application standards if they exist.

281 **5 System requirements and compatibility assessment**

282 **5.1 Standards**

283 All relevant standards shall apply as stated in 4.2.

284 **5.2 General design**

285 **5.2.1 General**

286 The integrated alarm system shall be designed so that any application is not adversely affected by any
287 other application in normal condition (including alarm condition).

288 Within integrated alarm systems, command signals can be transmitted from one application to another
289 application or from a Central Control Facility (CCF) to other parts of an application. Examples include
290 the remote disabling of a sensor from a CCF or the isolation of a CO₂ fire extinguishing system by an
291 access control system when a person enters the protected space.

292 The use of command signals can be beneficial to the orderly management of larger buildings or sites
293 including a number of buildings but they may also reduce safety and security if such facilities are
294 incorrectly applied. An example may be the remote unlocking of access doors by the fire detection
295 system without due regard to the implications on the security of the premises.

296 To help prevent command facilities being made available that could prove detrimental to the effective
297 and safe management of the protected premises and their occupants. The following design and
298 implementation procedures are recommended.

299 A.1 During system design, interested parties should define the operational processes for the
300 overall integrated system and in particular the command facilities that are likely to be
301 required.

302 A.2 The effects of incorrect operation of command facilities should be assessed during system
303 design. If there is a possibility of incorrect operation that could have a serious impact on
304 safety or security then the facility should either be disabled or its operation redefined to
305 overcome the possibility.

306 A.3 Application equipment should be selected where it is possible to enable only the desired
307 command facilities.

308 **5.2.2 Access levels**

309 Access levels to applications shall be consistent with the levels required by each application standard
310 and shall not give unauthorised access to any other application.

311 NOTE The term access level can have different meanings in different application standards.

312 **5.2.3 Special design requirements for configuration types**

313 **5.2.3.1 Special design requirements for type 1 configurations**

314 In a type 1 configuration the standard-required facilities in an application, in any condition, shall not be
315 adversely affected by any other dedicated system or any additional facilities in any operating
316 condition.

317 **5.2.3.2 Special design requirements for type 2 configurations**

318 In a type 2 configuration the applications sharing a facility with other applications shall in normal
319 operation not be influenced by any other application in normal operation.

320 In a type 2A configuration the integrity of any alarm standard-required facility in any one application
321 shall not be adversely affected by a single fault in another application.

322 In a type 2B configuration, the integrity of any alarm standard required facility in any one application
323 may be adversely affected by a single fault in another application.

324 A fault in a common facility shall be indicated in the relevant applications (for example all applications
325 sharing this common facility).

326 **5.3 Common facility for control**

327 Any manual controls for an application shall be clear and unambiguous.

328 Where a manual control is shared by more than one application, the applications which will be affected
329 by the operation of the control shall be clearly indicated.

330 **5.4 Common facility for indication**

331 **5.4.1 Reliability requirement**

332 A common facility for indication may be

333 – an additional facility:

334 the reliability of the indication facility shall be commensurate with its importance in terms of
335 indicating critical information in locations where actions will result from its indicated information,

336 – standard required: (this implies the configuration is type 2),

337 the indication facility shall comply with the most severe requirements defined in the applicable
338 standard(s).

339 **5.4.2 Indication of the information**

340 The colours used to display the information indicated and their visibility shall be such that the most
341 critical information is visible under expected levels of background illumination. Where relevant
342 standards specify colours for different types of information, these shall be adhered to. In case of
343 conflicts between the relevant standards the indications shall comply with the requirement of
344 EN 60073.

345 The audible indications of the different applications shall be coherent for the different conditions.

346 **5.4.3 Priorities**

347 Information shall be indicated in priority order in a clear and unambiguous manner.

348 The objectives behind the setting of priorities shall always be evaluated.

349 In general, the following priorities should be used.

350 – Priority 1 Alarm-signals from life protection related applications for example fire alarm for life
351 protection or personal attack alarm.

352 – Priority 2 Alarm-signals from property protection related applications for example fire alarm for
353 property protection or intruder alarm.

354 – Priority 3 Alarm signals from other alarm systems.

355 – Priority 4 Fault signals from life and property related alarm systems.

356 – Priority 5 Fault signals from other alarm systems.

357 – Priority 6 Non-alarm system information.

358 However, in some cases, the above order may be inappropriate and the simultaneous presence of
359 more than one type of messages may lead to another display priority.

360 For example a high pressure alarm in a boiler system may be designated as potentially requiring more
361 immediate action than some security applications, and thus may be given priority 1.

362 General requirements for indication priority are as follows:

- 363 – it shall be indicated when more alarms exist than can be currently displayed;
- 364 – beside the information actually displayed, additional information shall be available on demand,
365 but the visibility of the prioritised information shall be preserved;
- 366 – a repeated alarm signal, which is already displayed, shall not be re-displayed;
- 367 – it shall be indicated when alarms of more than one application exists;
- 368 – any operation of an application shall not prevent the indication of an alarm.

369 **5.5 Processing in alarm standard required processing elements**

370 **5.5.1 General**

371 For those applications for which program monitoring is required by the application standard, the
372 processing program of a common processing unit shall be monitored, so that a failure of the
373 monitoring sequence to include any such application is detected and indicated.

374 In integrated systems using a common processing element, the loss of the common processing
375 element is likely to jeopardise the effective management of events. Therefore, backup of processing
376 elements is recommended for such systems, particularly on large or complex sites, and this backup
377 processing elements shall enable the applications to perform all standard-required functions.

378 **5.5.2 Software for common processing elements**

379 **5.5.2.1 Individual standard requirements**

380 The applicable alarm standard requirements shall be applied to the software.

381 **5.5.2.2 Segregation of alarm software**

382 It is recommended that the different alarm application software should be segregated, in design,
383 documentation and individual modules. The possible effect of one software to other software should
384 be described in a specific document, in case of normal operation and in case of single failures.

385 **5.6 Connection to alarm transmission system**

386 If integrated alarm systems are connected to an alarm transmission system, then this system shall
387 comply with the relevant standards for alarm transmission systems.

388 When an alarm transmission system is required to transmit alarm signals from one or more
389 applications then the alarm transmission system shall be connected to those parts of the integrated
390 alarm system which fully comply with the relevant application standards.

391 Example: an alarm transmission system designed to transmit intruder alarms shall be connected to a
392 facility which complies with the European standards for intruder alarm systems.

393 An alarm transmission system may be used to transmit several types of alarms and may also be used
394 to transmit other types of information. In the case where several types of information need to be
395 transmitted at the same time then the priorities defined in 5.4.3 shall apply.

396 **5.7 Interconnection rules**

397 If devices which do not have to comply with one or more of the application standards are connected to
398 standard compliant devices then the interconnection rules below shall apply.

399 Devices shall be interconnected in such a way that

- 400 – only those controls to the alarm system will be accepted and processed which are permitted by
401 the application standard,
- 402 – unrecognised signals have no adverse effects,
- 403 – deliberate interference either,
- 404 – has no adverse effect on the intrusion application, access control and CCTV applications,
405 or
- 406 – these devices shall comply with the monitoring and tampering requirements of those application
407 standards.

408 **5.8 Power supplies**

409 Additional and/or common facilities shall not jeopardize the fulfilment of the power supply
410 requirements of any relevant application standard.

411 In particular, they shall not reduce the standby period as required by the application standards.

412 **5.9 Timing requirements**

413 The timing requirements specified in each relevant standard within each application shall be complied
414 with.

415 Any signal sent by a standard required facility to an additional facility shall be received and processed
416 so that the complete evaluation and transmission time shall not exceed 150 % of the specified time
417 required in the relevant standard.

418 If the times specified above depend on the number of devices connected to the transmission path, the
419 manufacturer shall clearly state the maximum number of devices that can be connected for each type.

420 **5.10 Simultaneous occurrence of events**

421 The system shall be designed so that the simultaneous occurrence of any type of event in more than
422 one application does not jeopardise the integrity of any of the applications. Timing requirements shall
423 still be met under such conditions.

424 **5.11 Verification of performance**

425 The verification of performance for each part of an integrated system shall conform to the relevant
426 standard(s) that apply to that application.

427 In addition to the above, the following procedures should be undertaken.

428 The performance of the integrated system should be verified in order to ensure that it operates in
429 accordance with an agreed cause-and-effect schedule (the agreed cause-and-effect schedule can be
430 the specification of the manufacturer or any agreement between manufacturer, installer, insurer,
431 regulating authorities and/or customer).

432 Verification of the performance within each application should be undertaken as follows:

- 433 – in its normal operation mode (including alarm conditions); and
- 434 – with predictable fault conditions such as power-supply failure imposed on the individual application,
- 435 to establish the effect on other applications.

436 Power-up and power-down procedures should be verified for system integrity and personnel safety.
437 For example, doors or windows held closed may open by accident and cause injury.

438 The procedures used and the results of each test should be recorded, to ensure that all interactions
439 between applications are satisfactory. the record should identify the actual interaction of the various
440 elements of the system during their normal operation (including alarm conditions).

441 It is recommended to check that the relevant applications guidelines are followed.

442 **5.12 Central control facilities**

443 **5.12.1 General**

444 This subclause refers to type 1 integrated alarm systems using a CCF.

445 **5.12.2 Classification**

446 The following classes shall be used.

447 – **Class 1:**

448 The CCF is used only to display information in the area where the operating personnel supervise
449 the system. The standard required indicating equipment (CIE or repeat indicators etc) is also
450 located in the same area (so that even in the case of failure of the CCF an alarm from the control
451 and indicating equipment can be noticed by the operating personnel).

452 – **Class 2:**

453 This class shall apply where the CCF is used only to display information and it is the sole
454 information display in the area where the operating personnel supervise the system.

455 NOTE If the CCF in addition to information display enables actions such as set/unset, disable/enable zones or loading of
456 system parameters this device shall be fully compliant with the application standards and therefore the system is a type 2
457 integrated system (e.g. Figure 6).

458 **5.12.3 Requirements**

459 **5.12.3.1 General**

460 A CCF shall be clearly identified as conforming with one of the previous classifications.

461 A CCF shall be located in an environment consistent with the equipment manufacturer's specification.

462 The CCF shall be dedicated solely to the integrated alarm system.

463 NOTE CCF class 2 is typically a PC and does not need to comply with the application standards as long as CCF cannot
464 adversely affect the dedicated alarm systems.

465 **5.12.3.2 Requirements for Class 1 CCF**

466 No additional requirements.

467 **5.12.3.3 Requirements for Class 2 CCF**

468 **5.12.3.3.1 Operation monitoring**

469 Continuous normal operation of the CCF shall be monitored and indicated at its location. In case of
470 failure visible and audible indications consistent with the relevant applications are required. The
471 operation monitoring shall include a programme monitoring facility so that a failure of the monitoring
472 sequence to include any application is detected and indicated.

473 The operation monitoring shall include the monitoring of the mains power supply.

474 **5.12.3.3.2 Procedure in case of failure**

475 As a CCF is typically a PC and not a standard compliant device a specific procedure in case of failure
476 shall exist. This procedure shall at least indicate how to access and operate the relevant dedicated
477 CIEs.

478 **5.12.3.3.3 Monitoring of communication**

479 Failure of communication with one of the dedicated systems shall be indicated at the CCF within the
480 timing requirements of the relevant standards. Transmission specifications shall be in accordance with
481 the associated application's standard requirement.

482 **5.12.3.3.4 Backup power supply**

483 A backup power supply for the CCF is required.

484 This backup power supply shall be able to power the CCF for at least the time needed to carry out the
485 necessary procedures in case of failure (see 5.12.3.3.2 – i.e. the time to get access to the relevant
486 CIEs).

487

488
489
490
491

Annex A **(informative)**

Application and installation guidelines and responsibilities

A.1 Specification

493 Prior to the commencement of a design for a integrated alarm system, a requirement specification
494 should be produced. The detail included within the specification should reflect the complexity of the
495 system and may include information on at least the following aspects:

- 496 – the individual applications and their desired performance requirements;
- 497 – the objectives to be achieved by the combination or integration;
- 498 – the characteristics of the building into which the integrated alarm system is to be installed.

A.2 Contractual responsibility

500 A integrated alarm system, by definition will include more than one application and is likely to include
501 some level of application interactivity. In order to assist the successful resolution of any difficulties
502 associated with the delivery of the specified interactivity, it is recommended that one main contractor be
503 appointed. This main contractor should be responsible for delivering the complete integrated alarm
504 system to the customer and providing a Declaration of Performance Certificate against the system
505 specification.

506 The main contractor associated with the project should ensure that the organization undertaking the
507 design has the relevant expertise to effectively accomplish the process.

508 A test schedule should be provided by the main contractor at system handover.

A.3 Installation and wiring

510 Where an integrated alarm system shares common wiring for more than one subsystem, this wiring should
511 meet the specification applicable to the relevant application with the highest integrity and performance
512 requirements.

A.4 Certification

514 The main contractor should provide the customer with a Declaration of Performance Certificate to
515 certify that the installation conforms to the requirements of the specification and that components
516 conform to relevant product standards. If deviations from the specification have been agreed with the
517 relevant parties, the main contractor should provide a statement of these deviations.

A.5 User responsibilities

A.5.1 System supervision

520 Organisations responsible for the management, operation and maintenance of the integrated alarm
521 system shall have adequate training and authority.

A.5.2 System log book

523 An overall system log book should be kept, as well as log books for each application in accordance
524 with application standards.

525 Entries in the system log book should start from the date on which any part of a integrated alarm
526 system is put into operation.

527 Records of all preventative and corrective maintenance carried out should be recorded in the system log
528 book.

529 **A.6 Maintenance and support**

530 **A.6.1 System upgrade and modification**

531 Before undertaking changes or extensions, consideration should be given to their effect on the
532 performance of the existing system.

533 The changes that have been made, together with details of the results of re-testing the system should
534 be incorporated into the system records.

535 Suppliers and/or maintenance companies should not make changes to the system without prior
536 agreement with the organization responsible for the system.

537 Where changes to components or applications are made after the integrated alarm system has been
538 commissioned, the organization responsible for the system should ensure that acceptance tests are
539 undertaken to verify that any changes of performance are in accordance with the specification.

540 **A.6.2 System tests**

541 In accordance with the test schedule which should be provided by the main contractor, regular tests
542 should be undertaken and results recorded in the log book.

543 **A.6.3 System maintenance**

544 The organization responsible for the integrated alarm system should ensure that adequate
545 maintenance of the system is carried out by qualified persons. Applications interact, a co-ordinated
546 approach should be taken to the maintenance of these applications.

547 All persons undertaking maintenance work on the system should be fully conversant with the function
548 and operation of the system on which they are working and its effects upon the performance and
549 integrity of other applications.

550 The main contractor should indicate if any special maintenance procedures are necessary to ensure
551 the continued satisfactory operation of the integrated alarm system.

552 **A.7 Documentation and training**

553 System documentation related to the combined and integrated alarm systems shall be concise,
554 complete and unambiguous.

555 Information provided shall be sufficient to install, put into operation, operate and maintain the system.

556 The configuration type (see Clause 4) for the combined and integrated alarm system shall be stated.

557 When a CCF is included then its classification (see 5.12.2) shall also be stated and environmental
558 specification shall be stated.

559 NOTE The documentation requirements specified in each relevant standard within each application shall be complied with for
560 that application.

561 Training manuals should be made available that clearly state the processes to be undertaken by
562 system operators.

563 System operators should be adequately trained on the system and their knowledge should be regularly
564 assessed.