

**SIEMENS**

**Cerberus<sup>®</sup> CS440  
Intrusion Detection System**

Interface Description  
SW Version 9

**do not copy**

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**Fire & Security Products**

Siemens Building Technologies Group

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**Note:**

**The system owner should be aware that the connection to (or the interaction with) other systems may impair the functionality and reliability of the fire detection and / or security and protection system.**

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# Changes in the documentation

## Errors in document e1492 Version 7

The page numbers refer to the document e1492 Version 7

Page	Correction
19	Structure 51, Datapoint ZONE: Explanatory sentence added about naming conflict of the term zone.
23	Structure 21, Datapoint DETECTOR ADDRESS: state EXCLUDED was not translated from German (AB), 21/ADR: Valid states: state EXCLUDED was not translated from German (AB),
23	Structure 21/ADR: Valid states: Description for state NOT READY completed
23	Structure 21/ADR: Valid states: Valid Commands ON (= INCLUDE) and OFF (= EXCLUDE) marked and a note added.
24	Structure 21/ADR: State transition diagram: from/to state EXCLUDED was not translated from German (AB)
24	Structure 21/ADR: State transition diagram: missing transition from EXCLUDED to TEST-ALARM added
24	Structure 21/ADR: State transition diagram: Commands ON and OFF marked according to the note on the previous page
24	Structure 21/ADR: State transition diagram: two erroneous telegrams (actions) corrected (N 55 xx -> N 69 xx)
24	Structure 21/ADR: Telegram repertoire: COMMANDS: telegram element ON (R 67 55) documented and Note added.
54	Examples, 6.1.1 Switching the section OFF: Section ON Command telegram corrected (..1027R64..), distinction between datapoint zone and detector section improved
54	Examples, 6.1.2 Switching the section ON: Section OFF Command telegram corrected (..1027R64..), Zone ON telegram corrected (..27N..), distinction between datapoint zone and detector section improved

## Changes since document e1492 Version 7

Page	Topic	Comments
25	Hierarchical level ZONE Structure 21 Datapoint Lock-up check	New state ACTIVE introduced. This information is only valid, if the zone is configured for door monitoring and the option „bolt open“ is enabled in the CC440. -> two different state transition diagrams

## Modification Index

Current Version	Date	Note
E1492	02.96	SW Version 7
E1492a	12.98	SW Version 9
E1492b	06.2001	New corporate image

# 1 Overview

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The CS440 intrusion detection system incorporates the latest generation of CERBERUS intrusion detection technology.

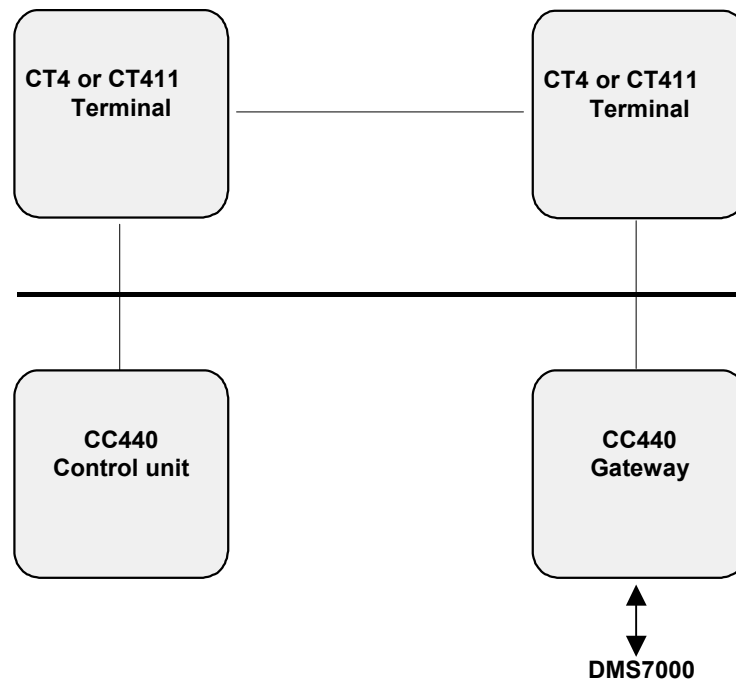
CS440 systems can be integrated via a gateway into a DMS7000 network and thereby connected to a CERBERUS control center or an external system.

Detailed information on the operating principle of the CS440 can be found in document e717 'CS4 Functional description'.

## 2 CS440 Hardware architecture

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A CS440 system consists of a control unit, terminals and (if required) a gateway which are interconnected via a shared communications bus, the C-bus.



Framework quantities:

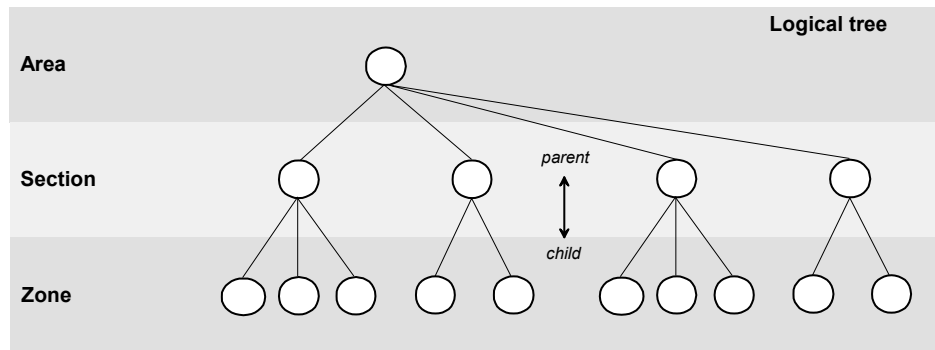
Total 16 devices per C-bus, of which:

- 1 CC440 control unit
- 1 CC440 gateway
- 14 CT4xx terminals

## 3 CS440 Information architecture

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The information within the CS440 is hierarchically arranged in a tree structure. This tree represents the logical structure and also contains physical substructures that represent the hardware. The resulting visible information is represented to the control center through the **logical tree**.



### 3.1 Logical tree

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The logical tree maps the externally visible data structure of the control unit and the gateway.

#### 3.1.1 Area

---

The area comprises the lower ranking nodes (sections, zones) and controls them through a common alarm organization. This organization has two different states:

DAY mode (manned)

Most door and room monitoring facilities are switched off. An event (alarm, fault) can be investigated by the on-site security personnel before an external alarm is initiated.

NIGHT mode (unmanned)

The system is armed and alarms are normally initiated without delay (configurable).

Framework quantities      1 Area

#### 3.1.2 Section

---

The Section ranks directly below the area and comprises the affiliated zones.

Framework quantities:      99 Sections

#### 3.1.3 Zone

---

The Zone level is the lowest hierarchical level that is visible to the user. The Zone is responsible for the evaluation of the affiliated detector loops.

Framework quantities:      512 Zones

### 3.1.4 Virtual zones

---

Virtual zones represent states of various individual or collective information sources. In the CC440 configuration file they are combined topically under virtual sections. However, they are not further discussed in this document because they do not have any data points.

Framework quantities:

- 99 Users
- 99 Passwords
- 9 Time channels
- 13 Individual data points in the intrusion sector
- 10 Individual data points in the basic sector

## 3.2 Structure of the tree nodes

---

The tree nodes in the visible, logical tree represent either a data base record or combine several such records which in the CC440 configuration file appear as virtual records. The records are described by a distinct data type (structure number = StrucNo) and the instances thereof are assigned a number (sequence number = SeqNo) that is unique within the data type.

The external reference of a tree node, the address field (ADF1/2), consists of a unique combination.

## 4 Integration of the CS440 architecture into the DMS7000

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A CS440 system can be integrated into a DMS7000 network via a CK440 gateway. Due to the different nature of the two systems special assumptions have to be made.

### 4.1 Basis for integration

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The telegram functionality of the CS440 is derived from the CS4 intrusion detection system. Existing telegrams are re-used, where this makes sense.

The comprehensive CS440 outline quantities as well as their complex information structure cannot be transported on a 1:1 basis by means of the DMS7000 telegram structure. For this reason the following rules apply:

- The two telegram address fields ADF1 and ADF2 are combined (ADF1/2) for representing the data point address of a node. For similar nodes, that is, multiple instances of a structure, the value in ADF1/2 is derived from the sequence number (unique per structure). For certain nodes, particularly virtual nodes, a unique value is assigned directly to the ADF1/2.

This means that the data point address still contains information on the data type of the node, but not on its relationship to other nodes. This information is made available separately with the aid of a separate configuration file for each CC440.



## 4.2 Addressing

---

The CS440 data point addresses are converted to the DMS7000 address according to the following rules:

- **Sectors**

The Sector field within the DMS7000 telegram is also used for addressing.  
Most nodes contain several data points from different sectors.

- **Data point addressing based on sequence number**

For structures that exist in multiple instances the addressing is based on a Base Offset per structure and the corresponding sequence number (SeqNo) in the data base of a CC440. The address is converted in the CK440 Gateway by means of a function in such a way that no part of the address in an ADF field has the hexadecimal value FF (restricted for historical reasons).

The Base offsets are defined in increments of 0400 (HEX) each and, for example, allow the following addresses for the first structure:

- 0401 ... 04FA	=>	1 ... 250
- 0501 ... 05FA	=>	251 ... 500
- 0601 ... 06FA	=>	501 ... 750
- 0701 ... 07FA	=>	751 ... 1000

- **Assigned data point addresses**

Virtual data points that occur only once are assigned a fixed address:

- In the Intrusion sector within the range 00D1 ... 00EF
- - In the Basic sector within the range 0000 ... 0010

- **DMS7000 network addresses**

Since the addresses in ADF1/2 are unique only within a CC440 control unit, additional steps must be taken to ensure the global uniqueness of the data point addresses. This is accomplished by assigning a separate DMS7000 network address per CC440 which includes also the data points of the gateway.

This means that a CS440 system occupies only one DMS7000 network address.

## 4.3 CC440 Configuration file

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The CC440 configuration files support the structuring/dimensioning of a data map in a control center that communicates with a CC440 via a DMS7000 network. The file contains all information that cannot be transported through the DMS7000 telegram.

A configuration file always relates to a complete CS440 subsystem (CC440 and CK440)

### 4.3.1 File format

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The CC440 configuration data are stored in a text file that are structured with the usual "Text with delimiter" format. This file can be imported directly e.g. into MS-ACCESS or EXCEL for further processing.

## 4.3.2 Syntax

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### EBNF symbols:

. End of sentence  
"x" Terminal symbol  
{ } 0..n repetitions  
[ ] optional part  
( ) precedence  
| exclusive OR  
' ' descriptive definition

### Common:

file = Record{Record}.  
Record = Field{";"Field"} Newline.  
Field = ""Text"".  
Newline = 'Line Delimiter (e.g. DOS: <CR><LF>)'.

### Syntax description:

Configfile = Record { Record }.  
Record = RecordNr ";" Record1 NewLine.  
RecordNr = DecNumber.  
Record1 = "1" ";" SeqNo ";" StrucNo ";" ParentSeqNo ";" TLSeqNo ";"  
CSXLevel ";" Text1 ";" Text2 ";"  
DMSSector ";" DMSAdf12 ";" Attribute ";" Layer ";" CSXNumber .  
SeqNo = DecNumber.  
StrucNo = DecNumber.  
ParentSeqNo = DecNumber.  
TLSeqNo = DecNumber.  
CSXLevel = "SYST" | "COMP" | "AREA" | "SECT" | "ZONE" |  
"ELEM" | "DBD" | "IBD" | "CBD" | "SIT" | "NONE".  
Text1 = TextString.  
Text2 = TextString.  
DMSSector = "A" | "B" | "C" | "D" | "E" | "0" | "X".  
DMSAdf12 = HexNumber4.  
Attribute = TextString.  
Layer = TextString.  
CSXNumber = TextString.  
Newline = LineDelimiter.  
LineDelimiter = 'End of Line Mark (OS dependant)'  
DecNumber = ""DecDigit { DecDigit }"".  
HexNumber4 = ""HexDigit HexDigit HexDigit HexDigit"".  
DecDigit = "0" | "1" | "2" | "3" | "4" | "5" | "6" | "7" | "8" | "9".  
HexDigit = DecDigit | "A" | "B" | "C" | "D" | "E" | "F".  
TextString = ""{ Letter }"".  
Letter = 'Printable characters incl. space, character set depends on  
the one used in CC440 (ISO Latin x)'

### 4.3.3 Semantics

---

The semantics describe the valid contents and the significance of the fields within the configuration file.

**RecordNo**

This field contains the sequence number of the entry in the configuration file.

**RecordType**

This field contains the type of entry. Currently only type 1 = Record1 is defined.

**SeqNo**

This field contains the sequence number (unique key per structure in the data base of a CC440) of the data point.

**StrucNo**

This field contains the structure number (data type) of the data point.

**ParentSeqNo**

This field contains the sequence number of the parent node of this data point.

**TLSeqNo**

This field is not used. Content = 0

**CSXLevel**

This field identifies the hierarchical level assigned to the data point. The following entries are valid:

AREA	Area
SECT	Section
ZONE	Zone

**Text1**

This field contains the first part of the textual description for this data point.

**Text2**

This field contains the second part of the textual description for this data point.

**DMSSector**

This field describes the affiliated danger sector. Valid entries are:

A	=	Fire
B	=	Extinguishing
C	=	Intrusion
D	=	Gas
E	=	Plant monitoring
0 (Null)	=	Basic
X	=	Dummy entry, only for structuring purposes

**DMSAdf12**

This field contains the ADF1/2 number. From the viewpoint of the DMS7000 the ADF1/2 number is the address of the CS440 data point. This number is principally used for associating process information (telegrams) with structure information (information file).

### **Attribute**

This field contains StrucNo. dependent specifics. If no specifics are needed this field contains a dash ("-").

#### StrucNo = 21 (Zone)

The attribute points to the existence of additional data points. Valid entries are:

LOCKUP	Lock-Up Check
ANTIMASK	Antimask monitoring

### **Layer**

This field identifies the tree assigned to this data point. The layer information is used as a prefix to the CSXNumber, because the latter is unique only within a tree. Valid entries:

LOG Logical tree

### **CSXNumber**

This field identifies the position of the node within the logical tree. Valid entries:

Area:Section:Zone Example: 001:003:087

## **4.3.4 Virtual structure numbers**

---

For virtual nodes the following structure numbers are defined in the configuration file:

980	=	Area
970	=	Section
960	=	Zone
950	=	Element
940	=	DBD
930	=	IBD
920	=	CBD

## **4.4 Information depth**

---

The information depth of the individual data points is determined by the (limited) functionality of the DMS7000 network.

- Parallel information such as alarm and status is supplied with the same address.
- Different features within a structure are not recognizable from the data point address, but additional addresses can be used for this purpose (e.g. Zone with Lock-Up Check).
- States that are too detailed are combined in a collective data point (e.g. faults).

## **4.5 Limitations**

### **4.5.1 Time telegrams**

---

Like the CC4 also the CC440 intrusion detection system control unit does not accept time telegrams that can be distributed by a control center via the DMS7000 network. A general time correction represents a great security risk because all security measures that are protected by a time channel would be defeated.

# 5 CS440 Behaviour in the DMS7000

## 5.1 Description of the data structures

---

The same description scheme is used for each data structure:

- Quick-reference description
- Valid states
- State transition diagram
- Telegram repertoire

In order to make the structure description identifiable also across several pages, the corresponding structure number is shown in front of the headings.

Example: **63/ORG: Valid states**

### 5.1.1 Quick-reference description

---

Provides information on the purpose of a specific data structure.

### 5.1.2 Valid states

---

Describes the valid states, their causes, and the applicable commands of the corresponding data structure.

### 5.1.3 State transition diagram

---

The state transition diagram shows the valid transitions.

- The Y-axis shows the actual state (FROM)  
The initial state (before polling) for the control center is shown with underscoring.
- The X-axis shows the subsequent state (TO).
- At the intersection the initiating event and the resulting action are shown.

Notation:      Event  
                  -----  
                  Action

Events are:

- Spontaneous state changes within the system control unit.
- Reactions to operator entries on the local terminal.
- Reactions to command telegrams from a control center.

State changes are shown with ↑ (incoming state) or ↓ (outgoing state).

Actions are the resulting DMS7000 telegrams.

An action can comprise one or more telegrams. For this reason only the variable components *Separator*, *Data A* and *Data B* of the corresponding telegram are shown.

In the diagram invalid transitions are marked with "---".



---

Unacknowledged/Acknowledged transitions within a specific state are not shown in the diagram for space reasons. A given state can always be acknowledged if the action telegram contains a separator = U.

When the control center is initialized (polling sequence), transitions are possible which according to the diagram would be invalid.

---

## 5.1.4 Telegram repertoire

Table that represents the telegram repertoire for MESSAGES and COMMANDS

The *Priority* field in the MESSAGES table shows the classification of the corresponding messages based on the following scale:

- NORMAL (low priority)
- ANOMALY
- FAULT
- ALARM (high priority)

Based on the priority also the acknowledgment command telegram can be determined.

The *Text A* and *Text B* fields contain the standard texts introduced in the DMS7000 network.

## 5.1.5 Acknowledging and resetting alarms

The commands for acknowledging and resetting alarms are highly flexible. They are derived strictly from the alarm telegram, but can be varied by inserting wild cards. In this way their effect can be extended from specific to non-specific and collective functions.

In addition to the address field (adf12) the specific commands contain also data field A which defines the type of alarm: Alarm, Sabotage, Sabotage alarm, and, as a special case, the code alarm. The commands are geared specifically to this alarm type.

The non-specific commands contain a wild card instead of the alarm type so that they influence all alarm types of the addressed zones (alarm and/or Sabotage).

By contrast the collective functions influence all alarms, also the momentarily invisible ones of a threat.

ACKNOWLEDGE	Telegram	Effect on
specific	xx aa R 01 80	Alarm
	xx aa R 0C 80	Sabotage
	xx aa R 0D 80	Sabotage alarm
	xx aa R 0B 80	Code alarm
Non-specific	xx aa R 00 80	All alarm types
Collective Acknowledgment	00 00 R 01 80	All alarms

RESET	Telegram	Effect on
Specific	xx aa R 01 83	Alarm
	xx aa R 0C 83	Sabotage
	xx aa R 0D 83	Sabotage alarm
	xx aa R 0B 83	Code alarm
Non-specific	xx aa R 00 83	All alarm types
Collective reset	00 00 R 01 83	All alarms

## **5.2 Hierarchical level: AREA**

### **5.2.1 Structure 63: Area INTRUSION**

---

The intrusion area is an abstract representation of the intrusion detection system. It contains the central data point for the state of the organization. For historical reasons (see CC4) these data points are represented as virtual zones and are grouped together with other similar data points in virtual section.

### **5.2.2 Structure 960: ORGANIZATION**

---

Virtual data point for the state of the organization.

When the organization state changes from Day to Night or vice versa, the states of the detector sections can be switched automatically, and the alarm initiation delays depend on the state of the organization.

#### **Data point ORGANIZATION (ORG)**

---

##### **960/ORG: Addressing**

Sector: INTRUSION

ADF1/2: 00EF

**960/ORG: Valid states**

State	Description	Valid commands
MANNED (Day mode)	The entire area is in <i>Day</i> mode.	NIGHT MODE
CHANGEOVER NOT COMPLETED	The changeover to <i>Night</i> mode has been prevented by an inhibition circuit because something was not in order (zone not ready). After a delay the organization mode is automatically switched back.	DAY MODE NIGHT MODE
UNMANNED (Night mode)	The area is in <i>Night</i> mode.	DAY MODE

**960/ORG: State transition diagram**

From	To	DAY MODE	CHANGEOVER NOT COMPLETED	NIGHT MODE
DAY MODE		---	↑Night mode & change-over inhibited ----- N 55 6E	↑Night mode ----- N 55 60
CHANGEOVER NOT COMPLETED		↑Day mode or timeout ----- N 55 60	---	↑Night mode ----- N 55 60
NIGHT MODE		↑Day mode ----- N 55 61	---	---

- Changeover inhibited = Alarm, Sabotage or inhibiting fault

**960/ORG: Telegram repertoire MESSAGES**

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
S	<CCaddr>	00 EF	N	55	60	NORMAL	Organization	Night (unmanned)
S	<CCaddr>	00 EF	N	55	61	ANOMALY	Organization	Day (manned)
S	<CCaddr>	00 EF	N	55	6E	ANOMALY	Organization	Changeover not completed

**960/ORG: Telegram repertoire COMMANDS**

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
S	<CCaddr>	00 EF	R	55	55	Organization	ON (unmanned)
S	<CCaddr>	00 EF	R	55	56	Organization	OFF (manned)



## 5.3 Hierarchical level: SECTION

### 5.3.1 Structure 51: Detector section

The detector sections are subordinate to the area and can be switched on and off by means of the area state. In case of direct operation also the Test state is possible. A detector section in turn contains zones that generally assume their ON, OFF and Test states from the section state (exception: Noise detector GM).

#### Data point ZONE (ZON)

This datapoint derives its name from an earlier naming system. Nevertheless, it must not be confused with the terms 'zone' from the hierarchy level or 'zone' from structure 21, which belong to that level!

#### 51/ZON: Addressing

Sector: INTRUSION

ADF1/2: 10gg (gg = Section number)

#### 51/ZON: Valid states

State	Description	Valid commands
OFF	The Section is switched off. But special zones (GM) can still remain on with reduced sensitivity.	ON TEST
TEST	The Section is in the Test state. Alarms from the affiliated zones are signalled only as test alarms.	ON OFF
ON	The Section is switched on. The corresponding zones assume the same state unless they are switched off individually.	OFF TEST

#### 51/ZON: State transition diagram

From	To	OFF	TEST	ON
OFF		---	↑ Test ----- N 64 57	↑ On ----- N 64 55
TEST		↑ Off ----- N 64 69	---	↑ On ----- N 64 55
<u>ON</u>		↑ Off ----- N 64 69	↑ Test ----- N 64 57	---

### 51/ZON: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
S	<CCaddr>	10 gg	N	64	55	NORMAL	Zone	ON
S	<CCaddr>	10 gg	N	64	57	ANOMALY	Zone	Test
S	<CCaddr>	10 gg	N	64	69	ANOMALY	Zone	OFF

### 51/ZON: Telegram repertoire: COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
S	<CCaddr>	10 gg	R	64	55	Zone	ON
S	<CCaddr>	10 gg	R	64	57	Zone	Test
S	<CCaddr>	10 gg	R	64	69	Zone	OFF

A detector section can also be switched via the addresses of the affiliated zones.

### 21: Telegram repertoire: COMMANDS data point ALARM/STATUS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
S	<CCaddr>	04 aa	R	64	55	Zone	ON
S	<CCaddr>	04 aa	R	64	57	Zone	Test
S	<CCaddr>	04 aa	R	64	69	Zone	OFF

### 21: Telegram repertoire: COMMANDS data point LOCK-UP CHECK

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
S	<CCaddr>	08 aa	R	64	55	Zone	ON
S	<CCaddr>	08 aa	R	64	57	Zone	Test
S	<CCaddr>	08 aa	R	64	69	Zone	OFF

### 21: Telegram repertoire: COMMANDS data point ANTIMASK MONITORING

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
S	<CCaddr>	0C aa	R	64	55	Zone	ON
S	<CCaddr>	0C aa	R	64	57	Zone	Test
S	<CCaddr>	0C aa	R	64	69	Zone	OFF

## 5.4 Hierarchical level: ZONE

### 5.4.1 Structure 21:Zone

The zone level is the lowest hierarchical level that is visible to the user and the zone represents the evaluation of the affiliated detector loops. In the detector address state it assumes the state of the higher ranking detector section unless the zone has been switched off (exception: noise detector, GM). The zone contains the following data points:

- ALARM / SABOTAGE
- DETECTOR ADDRESS
- LOCK-UP CHECK
- ANTIMASK MONITORING

The alarm and the state of the detector address are parallel states that are transmitted with the same address and the same sector. The other states are signalled with different addresses. Based on these addresses the higher ranking detector section can be switched -> Command \*).

#### Data point: ALARM/SABOTAGE (ALM)

For zones the type of alarm is configurable. In the communication with the control center certain types are combined; for example Fire and Plant monitoring are signalled as general alarms whereas Holdup and Threat are signalled as Holdup.

#### 21/ALM: Addressing

Sector: INTRUSION

ADF1/2: 04aa (aa = Zone number)

#### 21/ALM: Valid states

State	Description	Valid commands
ALARM	The state of the alarm contact in the detector has been evaluated as an alarm.	ACKNOWLEDGE RESET *) OFF, TEST
SABOTAGE	The sabotage protection of the detector has responded.	ACKNOWLEDGE RESET *) OFF, TEST
SABOTAGE ALARM	Alarm and Sabotage have been activated.	ACKNOWLEDGE RESET *) OFF, TEST
RESET	No Alarm or Sabotage exists.	*) ON, OFF, TEST

### 21/ALM: State transition diagram

From	To	ALARM	SABOTAGE	SABOTAGE ALARM	RESET
ALARM	---	---	---	↑ Sabotage ----- U 0D 0x	↓ Alarm ----- N 01 85
SABOTAGE	---	---	---	↑ Alarm ----- U 0D 0x	↓ Sabotage ----- N 0C 85
SABOTAGE ALARM	↓ Sabotage ----- U 01 0x	↓ Alarm ----- U 0C 0x	---	(↓ Alarm & Sabota- ge) ----- N 0D 85	---
RESET	↑ Alarm ----- U 01 0x	↑ Sabotage ----- U 0C 0x	(↑ Alarm & Sabota- ge.) ----- U 0D 0x	---	---

### 21/ALM: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
S	<CCaddr>	04 aa	U	01	00	ALARM	Alarm	---
S	<CCaddr>	04 aa	U	01	05	ALARM	Alarm	Intrusion
S	<CCaddr>	04 aa	U	01	06	ALARM	Alarm	Holdup
S	<CCaddr>	04 aa	U	01	07	ALARM	Alarm	Theft
S	<CCaddr>	04 aa	N	01	85	NORMAL	Alarm	Reset
S	<CCaddr>	04 aa	U	0C	00	ALARM	Sabotage	---
S	<CCaddr>	04 aa	U	0C	05	ALARM	Sabotage	Intrusion
S	<CCaddr>	04 aa	U	0C	06	ALARM	Sabotage	Holdup
S	<CCaddr>	04 aa	U	0C	07	ALARM	Sabotage	Theft
S	<CCaddr>	04 aa	N	0C	85	NORMAL	Sabotage	Reset
S	<CCaddr>	04 aa	U	0D	00	ALARM	Sabotage alarm	---
S	<CCaddr>	04 aa	U	0D	05	ALARM	Sabotage alarm	Intrusion
S	<CCaddr>	04 aa	U	0D	06	ALARM	Sabotage alarm	Holdup
S	<CCaddr>	04 aa	U	0D	07	ALARM	Sabotage alarm	Theft
S	<CCaddr>	04 aa	N	0D	85	NORMAL	Sabotage alarm	Reset

### 21/ALM: Telegram repertoire: COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
S	<CCaddr>	04 aa	R	01	80	Alarm	Acknowledgment (Alarm)
S	<CCaddr>	04 aa	R	01	83	Alarm	Reset (Alarm)
S	<CCaddr>	04 aa	R	0C	80	Sabotage	Acknowledgment (Alarm)
S	<CCaddr>	04 aa	R	0C	83	Sabotage	Reset (Alarm)
S	<CCaddr>	04 aa	R	0D	80	Sabotage alarm	Acknowledgment (Alarm)
S	<CCaddr>	04 aa	R	0D	83	Sabotage alarm	Reset (Alarm)

## Data point: DETECTOR ADDRESS (ADR)

This data point combines various states of the zone. The 'Illegal off' state of the higher ranking detector section is also mapped on this data point. The priorities are (in descending order):

EXCLUDED, TEST ALARM, TEST, NOT READY, ILLEGAL OFF, NORMAL OPERATION.

### 21/ADR: Addressing

Sector: INTRUSION

ADF1/2: 04aa (aa = Zone number)

### 21/ADR: Valid states

State	Description	Valid commands
EXCLUDED	The zone is deactivated (no evaluation by the control unit). It can be reactivated with ON.	<u>ON</u> (= INCLUDE)
TEST ALARM	The alarm contact is evaluated as a state.	<u>OFF</u> (= EXCLUDE) *) ON, OFF
TEST	The Test state can be used for checking the alarm response of the detector.	<u>OFF</u> (= EXCLUDE) *) ON, OFF
NOT READY	A pending alarm prevents the zone from being switched on. This state can be steady after automatic switching, or transient (for 60s) after manual handling; than it returns automatically to the previous one or disappears immediately, when the zone is switched OFF (via its section).	<u>OFF</u> (= EXCLUDE) *) OFF
ILLEGAL OFF	The switch-on check (EK) shows a deviating state of the zone and consequently also the section.	<u>OFF</u> (= EXCLUDE) *) ON, TEST
NORMAL OPERATION	The zone is in normal condition and can be either ON or OFF.	<u>OFF</u> (= EXCLUDE) *) ON, OFF, TEST



Note:

The underlined commands above are directly addressed to the zone, whereas the others, following the \*) go to the section. They must be distinguished from each other in the following table.

### 21/ADR: State transition diagram

From	To	EXCLUDED	TEST ALARM	TEST	NOT READY	ILLEGAL OFF	NORMAL OPERATION
EXCLUDED	---	---	↑On & Test & Alarm ----- N 69 0B	↑On & Test ----- N 69 57	---	↑On & EK ----- N 69 66	↑On ----- N 69 3C
TEST ALARM	↑Off ----- N 69 5E	---	---	---	↑On & Alarm ----- N 69 5F	↑Off & EK ----- N 69 66	↑On / ↑Off ----- N 69 3C
TEST	↑Off ----- N 69 5E	↑Alarm ----- N 69 0B	---	---	---	↑Off & EK ----- N 69 66	↑On / ↑Off ----- N 69 3C
NOT READY	↑Off ----- N 69 5E	---	---	---	---	↑Off & EK ----- N 69 66	↑Off & Alarm ----- N 69 3C
ILLEGAL OFF	↑Off ----- N 69 5E	---	---	↑Test ----- N 69 57	↑On & Alarm ----- N 69 5F	---	↑On & EK ----- N 69 3C
<b><u>NORMAL OPERATION</u></b>	↑Off ----- N 69 5E	---	---	↑Test ----- N 69 57	↑On & Alarm ----- N 69 5F	↑Off & EK ----- N 69 66	---

### 21/ADR: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
S	<CCaddr>	04 aa	N	69	0B	ANOMALY	Detector address	Test alarm
S	<CCaddr>	04 aa	N	69	3C	NORMAL	Detector address	Normal operation
S	<CCaddr>	04 aa	N	69	57	ANOMALY	Detector address	Test
S	<CCaddr>	04 aa	N	69	5E	ANOMALY	Detector address	OFF (= Exclude)
S	<CCaddr>	04 aa	N	69	5F	ANOMALY	Detector address	Not ready
S	<CCaddr>	04 aa	N	69	66	ANOMALY	Detector address	Illegal OFF

### 21/ADR: Telegram repertoire: COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
S	<CCaddr>	04 aa	R	69	55	Detector address	<u>ON</u> (= Include)
S	<CCaddr>	04 aa	R	69	5E	Detector address	<u>OFF</u> (= Exclude)
S	<CCaddr>	04 aa	R	67	55	" (element) -> see note !	<u>ON</u> (= Include)



Note:

The command 67 55 (element on) must **not be used for new applications** (supported for DMS7000 only)!

## Data point: LOCK-UP CHECK (LCK)

The Lock-Up Check state is used for evaluating the bolt contact in zones that are configured for door monitoring or lock-up checking. For lock-up checking the following must be taken into consideration. If the zone is switched on while it is in the state Warning (bolt open), this state changes to Inactive but the zone receives the state (detector address) Not ready. The state Active is valid only for door monitoring, provided the option „bolt open“ is enabled in CC440.

### 21/LCK: Addressing

Sector: INTRUSION

ADF1/2: 08aa (aa = Zone number)

### 21/LCK: Valid states

State	Description	Valid commands
WARNING	The bolt contact is open and the zone is ON if programmed for door monitoring, or OFF if programmed for Lock-Up Check.	*) ON, OFF, TEST
ACTIVE	The bolt contact is open and the zone is OFF if programmed for door monitoring only (and the option „bolt open“ is enabled).	*) ON, OFF, TEST
INACTIVE	The bolt contact is closed and the zone is OFF if programmed for door monitoring, or ON if programmed for Lock-Up Check.	*) ON, OFF, TEST

### 21/LCK: State transition diagram

(door 'monitoring'):

('lock-up checking')

From	To	WARNING	ACTIVE	INACTIVE	To	From	WARNING	INACTIVE
WARNING	---	---	↑ Off ----- N 5D 4F	↓ Bolt ----- N 5D 4D	WARNING	---	---	↓ Bolt ----- N 5D 4D
ACTIVE	↑ On ----- N 5D 67	---	---	↓ Bolt ----- N 5D 4D	INACTIVE	↑ Bolt ----- N 5D 67	---	---
INACTIVE	↑ Bolt ----- N 5D 67	↑ Bolt ----- N 5D 4F	---	---				

### 21/LCK: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
S	<CCaddr>	08 aa	N	5D	4D	NORMAL	Lock-Up Check	Inactive
S	<CCaddr>	08 aa	N	5D	4F	ANOMALY	Lock-Up Check	Active
S	<CCaddr>	08 aa	N	5D	67	ANOMALY	Lock-Up Check	Warning

### 21/LCK: Telegram repertoire: COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B

**Data point: ANTIMASK MONITORING (MSK)**

---

**21/MSK: Addressing**

Sector: INTRUSION

ADF1/2: 0Caa (aa = Zone number)

**21/MSK: Valid states**

State	Description	Valid commands
WARNING	The installed antimask monitoring responds.	*) ON, OFF, TEST
NORMAL OPERATION	The detector is in normal operation.	*) ON, OFF, TEST

**21/MSK: State transition diagram**

From	To	WARNING	NORMAL OPERATION
WARNING		---	↓ Masked ----- N 7C 3C
<u>NORMAL OPERATION</u>		↑ Masked ----- N 7C 67	---

**21/MSK: Telegram repertoire MESSAGES**

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
S	<CCaddr>	0C aa	N	7C	3C	NORMAL	Masking	Normal operation
S	<CCaddr>	0C aa	N	7C	67	ANOMALY	Masking	Warning

**21/MSK: Telegram repertoire: COMMANDS**

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B



## 5.5 VIRTUAL ZONES

The virtual data points represent the states of different individual or collective information sources. These are alarms that can be acknowledged and reset, faults that can be acknowledged, and states that cannot be acknowledged. A collective data point that can be acknowledged remains in the acknowledged state for as long as the information it contains has not been acknowledged yet. Basically an unacknowledged state has priority over an acknowledged state and the later has priority over a reset state.

### 5.5.1 Structure 960: Code-Alarm

This alarm can be initiated on the terminal by a person of the security service (special user group) who has forgotten his password. The control unit subsequently treats this person as logged on and the person can set his password to a new value. This alarm can also be initiated on the control unit from the control center.

#### Data point: CODEALARM (CAL)

##### 960/CAL: Addressing

Sector: INTRUSION

ADF1/2: 00D3

##### 960/CAL: Valid states

State	Description	Valid commands
ALARM	A user of the security service who has forgotten his password initiates this alarm and is subsequently logged onto the system.	ACKNOWLEDGE RESET
RESET	The data point is in the quiescent state.	INITIATE CODE ALARM

##### 960/CAL: State transition diagram

From	To	ALARM	RESET
ALARM		---	↑ Reset ----- N 0B 85
RESET		↑ Alarm ----- U 0B 55	---

##### 960/CAL: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
S	<CCaddr>	00 D3	U	0B	55	ALARM	Code alarm	ON
S	<CCaddr>	00 D3	N	0B	85	NORMAL	Code-alarm	Reset

##### 960/CAL: Telegram repertoire: COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
S	<CCaddr>	00 D3	R	0B	55	Code alarm	ON
S	<CCaddr>	00 D3	R	0B	80	Code alarm	Acknowledgment (Alarm)
S	<CCaddr>	00 D3	R	0B	83	Code alarm	Reset (Alarm)

## 5.5.2 Structure 960: Control unit protection

This state informs in parallel on the state of the control unit sabotage protection and its alarm. Data points:

- SABOTAGE
- CONTROL UNIT PROTECTION

### Data point: SABOTAGE (CUS)

#### 960/CUS: Addressing

Sector: INTRUSION

ADF1/2: 00D4

#### 960/CUS: Valid states

State	Description	Valid commands
SABOTAGE	The control unit protection has responded.	ACKNOWLEDGE RESET
RESET	The data point is the quiescent state.	---

#### 960/CUS: State transition diagram

From	To	SABOTAGE	RESET
SABOTAGE	SABOTAGE	---	↑ Reset ----- N 0C 85
RESET	RESET	↑ Sabotage ----- U 0C 0A	---

#### 960/CUS: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
S	<CCaddr>	00 D4	U	0C	0A	ALARM	Sabotage	Control unit
S	<CCaddr>	00 D4	N	0C	85	NORMAL	Sabotage	Reset

#### 960/CUS: Telegram repertoire: COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
S	<CCaddr>	00 D4	R	0C	80	Sabotage	Acknowledgment (Alarm)
S	<CCaddr>	00 D4	R	0C	83	Sabotage	Reset (Alarm)

## Data point: CONTROL UNIT PROTECTION (CUP)

---

### 960/CUP: Addressing

Sector: INTRUSION

ADF1/2: 00D4

### 960/CUP: Valid states

State	Description	Valid commands
OFF	Control unit protection is switched off.	ON
ON	Control unit protection is switched on.	OFF

### 960: State transition diagram

From	To	OFF	NORMAL OPERATION
OFF		---	↑ On ----- N 58 55
<u>NORMAL OPERATION</u>		↑ Off ----- N 58 56	---

### 960/CUP: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
S	<CCaddr>	00 D4	N	58	55	NORMAL	Control unit protection	ON
S	<CCaddr>	00 D4	N	58	56	ANOMALY	Control unit protection	OFF

### 960/CUP: Telegram repertoire: COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
S	<CCaddr>	00 D4	R	58	55	Control unit protection	ON
S	<CCaddr>	00 D4	R	58	56	Control unit protection	OFF

### 5.5.3 Structure 960: Sabotage general

Collective data point for sabotaging on alarm devices, operating units, detector lines, remote transmission facilities, control center or end of battery autonomy (deep discharge). Not included is sabotage monitoring of the control unit.

#### Data point: SABOTAGE (SAB)

#### 960/SAB: Addressing

Sector: INTRUSION

ADF1/2: 00D5

#### 960/SAB: Valid states

State	Description	Valid commands
SABOTAGE	Sabotage on: Alarm devices, operating unit, detector lines, remote transition facilities, end of battery autonomy, control center.	ACKNOWLEDGE RESET
RESET	The data point is in the quiescent state.	INITIATE SABOTAGE

#### 960/SAB: State transition diagram

From	To	SABOTAGE	RESET
SABOTAGE		---	↑ Reset ----- N 0C 85
RESET		↑ Sabotage ----- U 0C 00	---

#### 960/SAB: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
S	<CCaddr>	00 D5	U	0C	00	ALARM	Sabotage	---
S	<CCaddr>	00 D5	N	0C	85	NORMAL	Sabotage	Reset

#### 960/SAB: Telegram repertoire: COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
S	<CCaddr>	00 D5	R	0C	00	Sabotage	---
S	<CCaddr>	00 D5	R	0C	80	Sabotage	Acknowledgment (Alarm)
S	<CCaddr>	00 D5	R	0C	83	Sabotage	Reset (Alarm)

## 5.5.4 Structure 960: Time lock alarm

This collective data point indicates that the switch-off of a section or the changeover of the organization has been inhibited by one of the time channels.

### Data point: TIME LOCK (TLK)

#### 960/TLK: Addressing

Sector: INTRUSION  
ADF1/2: 00D6

#### 960/TLK: Valid states

State	Description	Valid commands
ALARM	An organization or Section that has been inhibited by a time channel has been switched off (time lock violation)	ACKNOWLEDGE RESET
RESET	The data point is in the quiescent state.	---

#### 960/TLK: State transition diagram

From	To	ALARM	RESET
ALARM		---	↑ Reset ----- N 01 85
RESET		↑ Alarm ----- U 01 09	---

#### 960/TLK: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
S	<CCaddr>	00 D6	U	01	09	ALARM	Alarm	Time lock
S	<CCaddr>	00 D6	N	01	85	NORMAL	Alarm	Reset

#### 960/TLK: Telegram repertoire: COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
S	<CCaddr>	00 D6	R	01	80	Alarm	Acknowledgment (Alarm)
S	<CCaddr>	00 D6	R	01	83	Alarm	Reset (Alarm)

## 5.5.5 Structure 24: Time channel

These data points indicate the state of the time channels. With a time channel in the ON state an area or any number of sections or operating devices can be inhibited (-> time lock), or the area or any number of sections can be switched on the basis of the state changes.

### Data point: TIME CHANNEL (TCH)

#### 24/TCH: Addressing

Sector: INTRUSION

ADF1/2: 1Ctt (tt = Time channel number)

#### 24/TCH: Valid states

State	Description	Valid commands
ON	The corresponding time channel is switched on.	---
OFF	The corresponding time channel is switched off.	---

#### 24/TCH: State transition diagram

To		ON	OFF
From			
ON		---	↑ Off ----- N 6B 56
OFF		↑ On ----- N 6B 55	---

#### 24/TCH: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
S	<CCaddr>	1C tt	N	6B	55	ANOMALY	Time channel	ON
S	<CCaddr>	1C tt	N	6B	56	NORMAL	Time channel	OFF

#### 24/TCH: Telegram repertoire: COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B

### 5.5.6 Structure 960: Keying error

This collective data point indicates that the admissible number of wrong password entries has been exceeded.

Data point: **KEYING ERROR (FCO)**

#### 960/ FCO: Addressing

Sector: INTRUSION

ADF1/2: 00D7

#### 960/ FCO: Valid states

State	Description	Valid commands
ALARM	The admissible number of wrong password entries on a terminal or on the control center has been exceeded.	ACKNOWLEDGE RESET
RESET	The data point is in the quiescent state.	INITIATE KEYING ERROR

#### 960/FCO: State transition diagram

From	To	ALARM	RESET
ALARM		---	↑ Reset ----- N 01 85
RESET		↑ Alarm ----- U 01 08	---

#### 960/ FCO: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
S	<CCaddr>	00 D7	U	01	08	ALARM	Alarm	Keying error
S	<CCaddr>	00 D7	N	01	85	NORMAL	Alarm	Reset

#### 960/ FCO: Telegram repertoire: COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
S	<CCaddr>	00 D7	R	01	08	Alarm	Keying error
S	<CCaddr>	00 D7	R	01	80	Alarm	Acknowledgment (Alarm)
S	<CCaddr>	00 D7	R	01	83	Alarm	Reset (Alarm)

## 5.5.7 Structure 960: Threat

This collective data point indicates that a Threat alarm has been initiated on a terminal. This alarm can also be initiated by the control center but for security reasons no further information is transmitted in this respect (alarm, remote transmission, external horn) until the message has been reset. This alarm can be displayed and acknowledged on a terminal. At the control center also the alarm that is not displayed can be processed with the collective acknowledgment and reset.

### Data point: THREAT (DRS)

#### 960/DRS: Addressing

Sector: INTRUSION

ADF1/2: 00D8

#### 960/DRS: Valid states

State	Description	Valid commands
ALARM	A threatened user has entered the threat password on a terminal.	ACKNOWLEDGE RESET
RESET	The data point is in the quiescent state.	INITIATE THREAT

#### 960/DRS: State transition diagram

From	To	ALARM	RESET
ALARM		---	↑ Reset ----- N 01 85
RESET		↑ Alarm ----- U 01 0C	---

#### 960/DRS: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
S	<CCaddr>	00 D8	U	01	0C	ALARM	Alarm	Threat
S	<CCaddr>	00 D8	N	01	85	NORMAL	Alarm	Reset

#### 960/DRS: Telegram repertoire: COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
S	<CCaddr>	00 D8	R	01	0C	Alarm	Threat
S	<CCaddr>	00 D8	R	01	80	Alarm	Acknowledgment (Alarm)
S	<CCaddr>	00 D8	R	01	83	Alarm	Reset (Alarm)



## 5.5.8 Structure 960: Revision

This data point indicates whether or not the control unit is in Revision mode.

**Data point: REVISION (REV)**

### 960/REV: Addressing

Sector: INTRUSION

ADF1/2: 00DA

### 960/REV: Valid states

State	Description	Valid commands
REVISION	The revision switch of the control unit is ON.	---
REVISION END	The revision switch of the control unit is OFF.	---

### 960/REV: State transition diagram

From	To	OFF	NORMAL OPERATION
OFF		---	↓ Revision ----- N 51 3B
NORMAL OPERATION		↑ Revision ----- N 51 3A	---

### 960/REV: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
S	<CCaddr>	00 DA	N	51	3A	ANOMALY	Revision	---
S	<CCaddr>	00 DA	N	51	3B	NORMAL	Revision	End

### 960/REV: Telegram repertoire: COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B

## 5.5.9 Structure 960: Sabotage message

This data point indicates whether or not the control unit is evaluating general sabotage events. Not affected by this is the control unit protection because this sabotage evaluation can be switched on/off separately.

### Data point: SABOTAGE MESSAGE (SAM)

#### 960/SAM: Addressing

Sector: INTRUSION

ADF1/2: 00DC

#### 960/SAM: Valid states

State	Description	Valid commands
OFF	The control unit is not evaluating any general sabotage events.	---
NORMAL OPERATION	General sabotage events are being evaluated.	---

#### 960/SAM: State transition diagram

From \ To	OFF	NORMAL OPERATION
OFF	---	↑ On ----- N 5F 3C
<u>NORMAL OPERATION</u>	↑ Off ----- N 5F 56	---

#### 960/SAM: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
S	<CCaddr>	00 DC	N	5F	3C	NORMAL	Sabotage message	Normal operation
S	<CCaddr>	00 DC	N	5F	56	ANOMALY	Sabotage message	OFF

#### 960/SAM: Telegram repertoire: COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B

## 5.5.10 Structure 960: Alarm evaluation

This data point signals that the service switch is on or that an external system component is switched off.

### Data point: ALARM EVALUATION (AEV)

#### 960/AEV: Addressing

Sector: INTRUSION

ADF1/2: 00DE

#### 960/AEV: Valid states

State	Description	Valid commands
OFF	Service switch is on or external system component is switched OFF	---
NORMAL OPERATION	Service switch is off and external system component is on,	---

#### 960/AEV: State transition diagram

From	To	OFF	NORMAL OPERATION
OFF		---	↑ On ----- N 5E 3C
<u>NORMAL OPERATION</u>		↑ Off ----- N 5E 56	---

#### 960/AEV: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
S	<CCaddr>	00 DE	N	5E	3C	NORMAL	Alarm evaluation	Normal operation
S	<CCaddr>	00 DE	N	5E	56	ANOMALY	Alarm evaluation	OFF

#### 960/AEV: Telegram repertoire: COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B

## 5.5.11 Structure 960: External horn

This data point indicates that an external horn output of the control unit has been activated. The data point remains active until the initiating event is reset. The horn may be already inactive because its activation time is controlled separately.

### Data point: EXTERNAL HORN (EXH)

#### 960/EXH: Addressing

Sector: INTRUSION

ADF1/2: 00E5

#### 960/EXH: Valid states

State	Description	Valid commands
ACTIVE	The external horn output is active.	---
INACTIVE	The external horn output is inactive.	---

#### 960/EXH: State transition diagram

From	To	ACTIVE	INACTIVE
ACTIVE		---	↑ Inactive ----- N 73 4D
INACTIVE		↑ Active ----- N 73 4F	---

#### 960/EXH: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
S	<CCaddr>	00 E5	N	73	4D	NORMAL	External horn	Inactive
S	<CCaddr>	00 E5	N	73	4F	ANOMALY	External horn	Active

#### 960/EXH: Telegram repertoire: COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B

## 5.5.12 Structure 960: Alarm remote transmission module (Alarm RT module)

This data point indicates the activation of an alarm remote transmission such as Intrusion, Holdup, Sabotage etc.

**Data point: ALARM REMOTE TRANSMISSION MODULE (RTA)**

### 960/RTA: Addressing

Sector: INTRUSION

ADF1/2: 00EA

### 960/RTA: Valid states

State	Description	Valid commands
ACTIVE	An alarm remote transmission is active.	---
DELAYED	The delay before the remote transmission is activated is being counted down and no alarm remote transmission is active yet.	---
INACTIVE	The alarm remote transmission is inactive.	---

### 960/RTA: State transition diagram

From	To	ACTIVE	DELAYED	INACTIVE
ACTIVE		---	---	↑ Inactive ----- N 09 4D
DELAYED		↑ Active ----- N 09 4F	---	↑ Inactive ----- N 09 4D
INACTIVE		↑ Active ----- N 09 4F	↑ Delayed ----- N 09 6D	---

### 960/RTA: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
S	<CCaddr>	00 EA	N	09	4D	NORMAL	RT alarm	Inactive
S	<CCaddr>	00 EA	N	09	4F	ANOMALY	RT alarm	Active
S	<CCaddr>	00 EA	N	09	6D	ANOMALY	RT alarm	Delayed

### 960/RTA: Telegram repertoire: COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B

### 5.5.13 Structure 960: User

This data point indicates whether or not the corresponding user has any input privileges. If the operation is enabled via the key this message is not generated.

#### Data point: USER (USR)

#### 960/USR: Addressing

Sector: INTRUSION

ADF1/2: 14hh (hh = User number)

#### 960/USR: Valid states

State	Description	Valid commands
LOGGED ON	The corresponding user hh has achieved operating privileges by means of password input.	---
LOGGED OFF	User hh is logged off.	---

#### 960/USR: State transition diagram

From	To	LOGGED ON	LOGGED OFF
LOGGED ON		---	↓ User ----- N 70 6C
LOGGED OFF		↑ User ----- N 70 6B	---

#### 960/USR: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
S	<CCaddr>	14 hh	N	70	6B	ANOMALY	User	Logged on
S	<CCaddr>	14 hh	N	70	6C	NORMAL	User	Logged off

#### 960/USR: Telegram repertoire: COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B

## 5.5.14 Structure 27: Password

On the control unit the desired number of users can be configured and passwords can be assigned to them. Each password is now managed by a two-part state which describes whether the corresponding password is enabled or disabled, and whether it has the default value or a changed value.

### Data point: PASSWORD (PWD)

#### 27/PWD: Addressing

Sector: INTRUSION

ADF1/2: 18hh ( hh = User number)

#### 27/PWD: Valid states

State	Description	Valid commands
DEFAULT/DISABLED	The user password contains the default value and is disabled.	ENABLE
DEFAULT/ENABLED	The user password contains the default value and is enabled for use (critical for security!).	DISABLE
DISABLED	The user password is disabled and has no default value. It remains disabled when a default value is set.	ENABLE SET DEFAULT
ENABLED	The password is enabled. It has been modified by the user or an authorized person (no default value).	DISABLE SET DEFAULT

#### 27/PWD: State transition diagram

From \ To	DEFAULT/ DISABLED	DEFAULT/ ENABLED	DISABLED	ENABLED
DEFAULT/ DISABLED	---	↑ Enable ----- N 72 E9	↑ Modify password ----- N 72 EA	
DEFAULT/ ENABLED	↑ Disable ----- N 72 E8	---		↑ Modify password ----- N 72 EB
DISABLED	↑ Set default ----- N 72 E8	---	---	↑ Enable ----- N 72 EB
ENABLED	---	↑ Set default ----- N 72 E9	↑ Disable ----- N 72 EA	---

#### 27/PWD: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
S	<CCaddr>	18 hh	N	72	E8	ANOMALY	Password	Default, disabled
S	<CCaddr>	18 hh	N	72	E9	ANOMALY	Password	Default, enabled
S	<CCaddr>	18 hh	N	72	EA	ANOMALY	Password	Disabled
S	<CCaddr>	18 hh	N	72	EB	NORMAL	Password	Enabled

#### 27/PWD: Telegram repertoire: COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
S	<CCaddr>	18 hh	R	72	E9	Password	Set default
S	<CCaddr>	18 hh	R	72	EA	Password	Disable
S	<CCaddr>	18 hh	R	72	EB	Password	Enable

## 5.5.15 Structure 960: Power supply

This collective data point indicates the state of the power supply in the control unit or in the CT411 terminals on two different addresses. The two aspects, Fault and Battery operation, are mapped on the data point. As a result, a fault (e.g. caused by a blown fuse) can be overwritten with battery operation and vice versa. When the event is acknowledged the actual aspect becomes visible.

### Data point: POWER SUPPLY (PWR)

#### 960/PWR: Addressing

Sector: BASIC  
 ADF1/2: **0007** Power supply of the control unit  
 or  
**0010** Power supply of the terminal

#### 960/PWR: Valid states

State	Description	Valid commands
FAULTY	Power supply faulty. This includes also inadmissible deep discharge in battery operation (→ Sabotage)	ACKNOWLEDGE
BATTERY OPERATION	Power failure, and predefined delay expired.	ACKNOWLEDGE
NORMAL OPERATION	No fault in the power supply unit (incl. battery).	---

#### 960/PWR: State transition diagram

From	To	FAULTY	BATTERY OPERATION	NORMAL OPERATION
FAULTY	---	---	↑ Mains failure ----- U 3C 3D	↓ Fault ----- N 3C 3C
BATTERY OPERATION	↑ Fault ----- U 3C 46	---	---	↓ Mains failure ----- N 3C 3C
NORMAL OPERATION	↑ Fault ----- U 3C 46	↑ Mains failure ----- U 3C 3D	---	---

#### 960/PWR: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CCaddr>	00 07 (00 10)	N	3C	3C	NORMAL	Power supply	Normal operation
Z	<CCaddr>	00 07 (00 10)	U	3C	3D	FAULT	Power supply	Battery operation
Z	<CCaddr>	00 07 (00 10)	U	3C	46	FAULT	Power supply	Faulty

#### 960/PWR: Telegram repertoire: COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
Z	<CCaddr>	00 07 (00 10)	R	3C	86	Power supply	Acknowledgment (Fault)



## 5.5.16 Structure 960: Data network

This data point represents the state of the two CERLOOP data lines that connect the gateway with its two neighboring nodes within the CERLOOP ring topology.

If one of the two data lines fails the redundancy is lost but the connection between the control center and the system control unit can still be maintained. If both data lines fail the connection between the control center and the system control unit is lost because no presence telegrams can be transmitted. The absence of these telegrams is detected by the MK7022 communications unit and signalled to the external system. For detailed information → see document e1435.

### Data point: DATA NETWORK (NET)

#### 960/NET: Addressing

Sector: BASIC

ADF1/2: 0008

#### 960/NET: Valid states

State	Description	Valid commands
FAULTY	One of the two CERLOOP data lines on the CK440 gateway has failed.	ACKNOWLEDGE
NORMAL OPERATION	No network fault exists in the gateway.	---

#### 960/NET: State transition diagram

From	To	FAULTY	NORMAL OPERATION
FAULTY		---	↓ Fault ----- N 38 3C
<u>NORMAL OPERATION</u>		↑ Fault ----- U 38 46	---

#### 960/NET: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CCaddr>	00 08	N	38	3C	NORMAL	Data network	Normal operation
Z	<CCaddr>	00 08	U	38	46	FAULT	Data network	Faulty

#### 960/NET: Telegram repertoire: COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
Z	<CCaddr>	00 08	R	38	86	Data network	Acknowledgment (Fault)

## 5.5.17 Structure 960: Remote transmission device

This data point represents the state of the 'Remote transmission faulty' input which can be activated by the remote transmission equipment connected to the system control unit (various alarms, fault, night organization check).

### Data point: REMOTE TRANSMISSION DEVICE (RTD)

#### 960/NET: Addressing

Sector: BASIC

ADF1/2: 0009

#### 960/RTD: Valid states

State	Description	Valid commands
FAULTY	The "REMOTE TRANSMISSION DEVICE faulty" input is active.	ACKNOWLEDGE
NORMAL OPERATION	The "REMOTE TRANSMISSION DEVICE faulty" input is inactive.	---

#### 960/RTD: State transition diagram

From	To	FAULTY	NORMAL OPERATION
FAULTY		---	↓ Inactive ----- N 37 3C
<u>NORMAL OPERATION</u>		↑ Active ----- U 37 46	---

#### 960/RTD: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CCaddr>	00 09	N	37	3C	NORMAL	REMOTE TRANSMISSION DEVICE	Normal operation
Z	<CCaddr>	00 09	U	37	46	FAULT	REMOTE TRANSMISSION DEVICE	Faulty

#### 960/RTD: Telegram repertoire: COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
Z	<CCaddr>	00 09	R	37	86	REMOTE TRANSMISSION DEVICE	Acknowledgment (Fault)

## 5.5.18 Structure 960: REMOTE TRANSMISSION Fault

This data point indicates the state of the REMOTE TRANSMISSION fault.

**Data point: REMOTE TRANSMISSION FAULT (RTF)**

### 960/RTF: Addressing

Sector: BASIC

ADF1/2: 000F

### 960/RTF: Valid states

State	Description	Valid commands
ACTIVE	The REMOTE TRANSMISSION fault is active.	---
DELAYED	The delay before activation of the REMOTE TRANSMISSION is being counted down and no REMOTE TRANSMISSION fault output is active.	---
INACTIVE	The REMOTE TRANSMISSION fault is inactive.	---

### 960/RTF: State transition diagram

From \ To	ACTIVE	DELAYED	INACTIVE
ACTIVE	---	---	↑ Inactive ----- N 3B 4D
DELAYED	↑ Active ----- N 3B 4F	---	↑ Inactive ----- N 3B 4D
INACTIVE	↑ Active ----- N 3B 4F	↑ Delayed ----- N 3B 6D	---

### 960/RTF: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CCaddr>	00 0F	N	3B	4D	NORMAL	RT fault	Inactive
Z	<CCaddr>	00 0F	N	3B	4F	ANOMALY	RT fault	Active
Z	<CCaddr>	00 0F	N	3B	6D	ANOMALY	RT fault	Delayed

### 960/RTF: Telegram repertoire: COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B

## 5.5.19 Structure 960: External fault

This data point represents the “External fault” input in the system control unit. The external system can communicate their FAULTS via this input.

### Data point: EXTERNAL FAULT (EXF)

#### 960/EXF: Addressing

Sector: BASIC  
ADF1/2: 000A

#### 960/EXF: Valid states

State	Description	Valid commands
ACTIVE	The “External fault” input is active.	ACKNOWLEDGE
INACTIVE	The “External fault” input is inactive.	---

#### 960/EXF: State transition diagram

From	To	ACTIVE	INACTIVE
ACTIVE		---	↑ Inactive ----- N 4F 4D
INACTIVE		↑ Active ----- U 4F 4F	---

#### 960/EXF: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CCaddr>	00 0A	N	4F	4D	NORMAL	External fault	Inactive
Z	<CCaddr>	00 0A	U	4F	4F	FAULT	External fault	Active

#### 960/EXF: Telegram repertoire: COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
Z	<CCaddr>	00 0A	R	4F	86	External fault	Acknowledgment (Fault)

## 5.5.20 Structure 960: General fault (evaluation)

This collective data point represents the states of the different evaluation units such as the system control unit, gateway, operating unit, detector, detector electronics (ADI), digital output, etc.

### Data point: EVALUATION (EVA)

#### 960/EVA: Addressing

Sector: BASIC

ADF1/2: 000C

#### 960/EVA: Valid states

State	Description	Valid commands
FAULTY	One or several evaluation units are faulty.	ACKNOWLEDGE
NORMAL OPERATION	All evaluation units are in the normal operating state.	---

#### 960/EVA: State transition diagram

From	To	FAULTY	NORMAL OPERATION
FAULTY		---	↓ Fault ----- N 35 3C
<u>NORMAL OPERATION</u>		↑ Fault ----- U 35 46	---

#### 960/EVA: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CCaddr>	00 0C	N	35	3C	NORMAL	Evaluation	Normal operation
Z	<CCaddr>	00 0C	U	35	46	FAULT	Evaluation	Faulty

#### 960/EVA: Telegram repertoire: COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
Z	<CCaddr>	00 0C	R	35	86	Evaluation	Acknowledgment (Fault)

## 5.5.21 Structure 960: Printer

This collective data point represents the state of the printer in the system control unit. It comprises the two aspects 'Printer off' and 'FAULT', neither of which needs to be acknowledged.

### Data point: PRINTER (PRT)

#### 960/PRT: Addressing

Sector: BASIC

ADF1/2: 000D

#### 960/PRT: Valid states

State	Description	Valid commands
OFF	The printer is switched off.	ACKNOWLEDGE
FAULTY	One of the following FAULTS exists in the printer: - XOFF timeout - End of paper - Printing mechanism blocked	ACKNOWLEDGE
NORMAL OPERATION	The printer is switched on and no FAULT exists.	---

#### 960/PRT: State transition diagram

From \ To	OFF	FAULTY	NORMAL OPERATION
OFF	---	↑ Fault ----- N 36 46	↑ On ----- N 36 3C
FAULTY	↑ Off ----- N 36 56	---	↓ Fault ----- N 36 3C
NORMAL OPERATION	↑ Off ----- N 36 56	↑ Fault ----- N 36 46	---

#### 960/PRT: Telegram repertoire MESSAGES

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CCaddr>	00 0D	N	36	3C	NORMAL	Printer	Normal operation
Z	<CCaddr>	00 0D	N	36	46	FAULT	Printer	Faulty
Z	<CCaddr>	00 0D	N	36	56	ANOMALY	Printer	OFF

#### 960/PRT: Telegram repertoire: COMMANDS

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B

## 5.6 Polling procedure

---

For initializing the control center with the process image after a communications interruption, the *control unit* must be *polled* according to the following rules:

- A special set of telegrams is defined for the polling sequence.
- The polling sequence is typically used when a control unit signs back on to the network, or when the control center is started up.
- Each defined danger sector of a CC440 must be polled separately. The existing sectors are defined in the configuration file.
- Polling is sequential in order to minimize the network load.
- If a control unit does not respond to polling commands within the programmed time (approx. 20 sec.) the next control unit is polled.
- In response to polling commands only abnormal states are transmitted, embedded between a polling begin and polling end telegram.

### 5.6.1 Telegram repertoire

---

#### Commands

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
S, Z	<CCaddr>	0000	R	53	55	Polling	ON
S, Z	<CCaddr>	0000	R	53	52	Polling	Perform

#### Messages

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
S, Z	<CCaddr>	0000	N	53	3A	NORMAL	Polling	Begin
S, Z	<CCaddr>	0000	N	53	3B	NORMAL	Polling	End

## 5.6.2 Example: Polling a CS440 system

### System configuration

Assumption: the CS440 system consists of a CC400 control unit that manages the data points of the CK440 gateway.

- CC440 No.1: DMS address: 121 Sectors: BASIC (Z), INTRUSION (S).

### Polling procedure

Control center	Telegram	CC440 Control unit No.1
Poll CC440 No.1, Sector Z	Z1210000R5355→ Z1210000R5352→	
	←Z1210000N533A ←Z121000DN3656 ←Z1210008U3846 ←Z1210000N533B	Responds with the abnormal states: - Printer switched off - Data network faulty (gateway)
Poll CC440 No.1, Sector S	S1210000R5355→ S1210000R5352→	
	←S1210000N533A ←S1210509N695E ←S121041AN6966 ←S1211032U6469 ←S12100EFN5560 ←S1210000N533B	Responds with the abnormal states: - Detector address off (259.) - Detector address illegal off (26.) - Zone off (50.) - Organization "Night"
Poll CC440 No.1, Sector P	P1210000R5355→ P1210000R5352→	
	←P1210000N533A ←P1210000N533B	(No data points exist)
Polling completed.		



## 6 Examples

The following examples clarify the typical operation of the control center. The sequence of the individual telegrams within a block has been selected arbitrarily!

### 6.1 Switching the section and the organization

#### 6.1.1 Switching the section OFF

Assumptions: CC440 with DMS address 121, Section with switch-on check (datapoint = zone!)

CC440	Telegram	Control center
(Section OFF command)	← S1211027R6456	Operator switches datapoint zone OFF
Detector section is illegal OFF (Section = 39 -> Zone= 249, Zone= 252)	S1211027N6469 → S12104F9N695F → S1210502N695F →	(Zone OFF) (Detector address Illegal OFF) (Detector address Illegal OFF)
(Section ON command)	← S1211027R6455	Operator switches datapoint zone ON
Detector section is in normal state	S1211027N6455 → S1210502N693C → S12104F9N693C →	(Zone ON) (Detector address normal operation) (Detector address normal operation)

#### 6.1.2 Switching the Section ON

Assumptions: CC440 with DMS address= 121, pending alarm event prevents switch-on (alarm event can be, for example, an open door with bolt contact).

CC440	Telegram	Control center
(Section ON command)	← S1211027R6455	Operator switches datapoint zone ON
Zone is not ready (Zone= 259)	S1210509N695F →	(Detector address Not ready)
(Section OFF command)	← S1211027R6456	Operator switches datapoint zone OFF
Zone is in the normal state	S1210509N693C →	(Detector address in normal operation)
The alarm event is being remedied		
(Section ON command)	← S1211027R6455	Operator switches datapoint zone ON
The detector section switches ON	S1211027N6455 →	(Zone ON)

#### 6.1.3 Switching the organization to Night mode

Assumptions: CC440 with DMS address= 121, pending alarm event prevents changeover (alarm event can be, for example, an open window).

CC440	Telegram	Control center
(Night mode command)	← S12100EFR5555	Operator switches to Night mode.
Zone is Not ready (Zone = 10)	S121040AN695F → S12100EFN556E →	(Detector address Not ready) (Organization changeover not completed)
(Day command)	← S12100EFR5556	Operator switches to Day mode
Organization is back in Day mode	S12100EFN5561 →	(Day organization)
The alarm event is being remedied		
(Nigh mode command)	← S12100EFR5555	Operator switches to Night mode
A section switches ON automatically. Organization is in Night mode.	S1211013N6455 → S12100EFN5560 →	(Zone ON) (Night organization)

## 6.2 Alarm processing

### 6.2.1 Alarm in Day mode

Assumptions: CC440 with DMS address= 121, organization = Day mode (typical configuration) (the alarm transmission delay is configuration dependent).

CC440	Telegram	Control center
Alarm contact of a detector responds (Zone = 10)	S121040AU0107 → S12100EAN096D → S12100E5N734F →	(Theft alarm) (RT alarm delayed) (External horn active)
Delay time expires	S12100EAN094F →	(RT alarm active)
(Alarm acknowledgment command)	← S121040AR0180	Operator acknowledges alarm
'Alarm' state acknowledged	S121040AQ0107 →	(Theft alarm <acknowledged>)
(Alarm reset command)	← S121040AR0183	Operator resets the alarm
'Alarm' state is reset	S121040AN0185 → S12100EAN094D → S12100E5N734D →	(Alarm <Reset>) (RT alarm inactive) (External horn inactive)

## 7 List of telegrams

### 7.1 Intrusion sector

#### 7.1.1 Alarms from zones

---

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
S	<CCaddr>	04 aa	U	01	00	ALARM	Alarm	---
S	<CCaddr>	04 aa	U	01	05	ALARM	Alarm	Intrusion
S	<CCaddr>	04 aa	U	01	06	ALARM	Alarm	Holdup
S	<CCaddr>	04 aa	U	01	07	ALARM	Alarm	Theft
S	<CCaddr>	04 aa	U	0C	00	ALARM	Sabotage	---
S	<CCaddr>	04 aa	U	0C	05	ALARM	Sabotage	Intrusion
S	<CCaddr>	04 aa	U	0C	06	ALARM	Sabotage	Holdup
S	<CCaddr>	04 aa	U	0C	07	ALARM	Sabotage	Theft
S	<CCaddr>	04 aa	U	0D	00	ALARM	Sabotage alarm	---
S	<CCaddr>	04 aa	U	0D	05	ALARM	Sabotage alarm	Intrusion
S	<CCaddr>	04 aa	U	0D	06	ALARM	Sabotage alarm	Holdup
S	<CCaddr>	04 aa	U	0D	07	ALARM	Sabotage alarm	Theft

#### 7.1.2 Other alarms

---

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
S	<CCaddr>	00 D7	U	01	08	ALARM	Alarm	Keying error
S	<CCaddr>	00 D6	U	01	09	ALARM	Alarm	Time lock
S	<CCaddr>	00 D8	U	01	0C	ALARM	Alarm	Threat
S	<CCaddr>	00 D3	U	0B	55	ALARM	Code alarm	ON
S	<CCaddr>	00 D5	U	0C	00	ALARM	Sabotage	---
S	<CCaddr>	00 D4	U	0C	0A	ALARM	Sabotage	Control unit

#### 7.1.3 Initiating alarms from the control center:

---

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
S	<CCaddr>	00 D7	R	01	08	Alarm	Keying error
S	<CCaddr>	00 D8	R	01	0C	Alarm	Threat
S	<CCaddr>	00 D3	R	0B	55	Code alarm	ON
S	<CCaddr>	00 D5	R	0C	00	Sabotage	---

## 7.1.4 Alarm acknowledgment and reset commands

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
S	<CCaddr>	<Adf12>	R	mm	80	Text mm	Acknowledgment (Alarm)
S	<CCaddr>	<Adf12>	R	00	80	---	Acknowledgment (Alarm)
S	<CCaddr>	<Adf12>	R	00	80	---	Acknowledgment (Alarm)
S	<CCaddr>	<Adf12>	Q	mm	mm	Text mm	Acknowledged (Alarm)
S	<CCaddr>	<Adf12>	R	mm	83	Text mm	Reset (Alarm)
S	<CCaddr>	<Adf12>	R	00	83	---	Reset (Alarm)
S	<CCaddr>	<Adf12>	R	00	83	---	Reset (Alarm)
S	<CCaddr>	<Adf12>	Q	mm	mm	Text mm	Reset (Alarm)

## 7.1.5 States of the detector sections and zones

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
S	<CCaddr>	08 aa	N	5D	4D	NORMAL	Lock-Up Check	Inactive
S	<CCaddr>	08 aa	N	5D	67	ANOMALY	Lock-Up Check	Warning
S	<CCaddr>	10 gg	N	64	55	NORMAL	Zone	ON
S	<CCaddr>	10 gg	N	64	57	ANOMALY	Zone	Test
S	<CCaddr>	10 gg	N	64	69	ANOMALY	Zone	OFF
S	<CCaddr>	04 aa	N	69	0B	ANOMALY	Detector address	Test alarm
S	<CCaddr>	04 aa	N	69	3C	NORMAL	Detector address	Normal operation
S	<CCaddr>	04 aa	N	69	57	ANOMALY	Detector address	Test
S	<CCaddr>	04 aa	N	69	5E	ANOMALY	Detector address	OFF
S	<CCaddr>	04 aa	N	69	5F	ANOMALY	Detector address	Not ready
S	<CCaddr>	04 aa	N	69	66	ANOMALY	Detector address	Illegal OFF
S	<CCaddr>	0C aa	N	7C	3C	NORMAL	Masking	Normal operation
S	<CCaddr>	0C aa	N	7C	67	ANOMALY	Masking	Warning

## 7.1.6 Commands for detector sections and zones

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
S	<CCaddr>	10gg	R	64	55	Zone	ON
S	<CCaddr>	10gg	R	64	57	Zone	Test
S	<CCaddr>	10gg	R	64	69	Zone	OFF
S	<CCaddr>	04 aa	R	64	55	Zone	ON
S	<CCaddr>	04 aa	R	64	57	Zone	Test
S	<CCaddr>	04 aa	R	64	69	Zone	OFF
S	<CCaddr>	08 aa	R	64	55	Zone	ON
S	<CCaddr>	08 aa	R	64	57	Zone	Test
S	<CCaddr>	08 aa	R	64	69	Zone	OFF
S	<CCaddr>	0C aa	R	64	55	Zone	ON
S	<CCaddr>	0C aa	R	64	57	Zone	Test
S	<CCaddr>	0C aa	R	64	69	Zone	OFF
S	<CCaddr>	04 aa	R	69	55	Detector address	ON
S	<CCaddr>	04 aa	R	69	5E	Detector address	OFF

## 7.1.7 Other states

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
S	<CCaddr>	00 EA	N	09	4D	NORMAL	Remote alarm	Inactive
S	<CCaddr>	00 EA	N	09	4F	ANOMALY	Remote alarm	Active
S	<CCaddr>	00 EA	N	09	6D	ANOMALY	Remote alarm	Delayed
S	<CCaddr>	00 DA	N	51	3A	ANOMALY	Revision	---
S	<CCaddr>	00 DA	N	51	3B	NORMAL	Revision	End
S	<CCaddr>	00 EF	N	55	60	ANOMALY	Organization	Night mode (unmanned)
S	<CCaddr>	00 EF	N	55	61	ANOMALY	Organization	Day mode (manned)
S	<CCaddr>	00 EF	N	55	6E	ANOMALY	Organization	Changeover not completed
S	<CCaddr>	00 D4	N	58	55	NORMAL	Control unit protection	ON
S	<CCaddr>	00 D4	N	58	56	ANOMALY	Control unit protection	OFF
S	<CCaddr>	00 DE	N	5E	3C	NORMAL	Alarm transmission	Normal operation
S	<CCaddr>	00 DE	N	5E	56	ANOMALY	Alarm transmission	OFF
S	<CCaddr>	00 DC	N	5F	3C	NORMAL	Sabotage message	Normal operation
S	<CCaddr>	00 DC	N	5F	56	ANOMALY	Sabotage message	OFF
S	<CCaddr>	1C tt	N	6B	55	ANOMALY	Time program,	ON
S	<CCaddr>	1C tt	N	6B	56	NORMAL	Time program	OFF
S	<CCaddr>	14 hh	N	70	6B	NORMAL	User	Signed on
S	<CCaddr>	14 hh	N	70	6C	ANOMALY	User	Signed off
S	<CCaddr>	18 hh	N	72	E8	ANOMALY	Password	Default, disabled
S	<CCaddr>	18 hh	N	72	E9	ANOMALY	Password	Default, enabled
S	<CCaddr>	18 hh	N	72	EA	ANOMALY	Password	Disabled
S	<CCaddr>	18 hh	N	72	EB	NORMAL	Password	Enabled
S	<CCaddr>	00 E5	N	73	4D	NORMAL	External horn	Inactive
S	<CCaddr>	00 E5	N	73	4F	ANOMALY	External horn	Active

## 7.1.8 Other commands

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
S	<CCaddr>	00 EF	R	55	55	Organization	ON (Night mode)
S	<CCaddr>	00 EF	R	55	56	Organization	OFF (Day mode)
S	<CCaddr>	00 D4	R	58	55	Control unit protection	ON
S	<CCaddr>	00 D4	R	58	56	Control unit protection	OFF
S	<CCaddr>	18 hh	R	72	E9	Password	Set default
S	<CCaddr>	18 hh	R	72	EA	Password	Disable
S	<CCaddr>	18 hh	R	72	EB	Password	Enable

## 7.2 Basic sector

### 7.2.1 States in the basic condition or not acknowledgeable

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CCaddr>	00 0C	N	35	3C	NORMAL	Evaluation	Normal operation
Z	<CCaddr>	00 0D	N	36	3C	NORMAL	Printer	Normal operation
Z	<CCaddr>	00 0D	N	36	46	FAULT	Printer	Faulty
Z	<CCaddr>	00 0D	N	36	56	ANOMALY	Printer	OFF
Z	<CCaddr>	00 09	N	37	3C	NORMAL	REMOTE TRANSMISSION DEVICE	Normal operation
Z	<CCaddr>	00 08	N	38	3C	NORMAL	Data network	Normal operation
Z	<CCaddr>	00 0F	N	3B	4D	NORMAL	RT fault	Inactive
Z	<CCaddr>	00 0F	N	3B	4F	ANOMALY	RT fault	Active
Z	<CCaddr>	00 0F	N	3B	6D	ANOMALY	RT fault	Delayed
Z	<CCaddr>	00 07 (00 10)	N	3C	3C	NORMAL	Power supply	Normal operation
Z	<CCaddr>	00 0A	N	4F	4D	NORMAL	Extern-Fault	Inactive

### 7.2.2 States to be acknowledged

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Priority	Text A	Text B
Z	<CCaddr>	00 0C	U	35	46	FAULT	Evaluation	Faulty
Z	<CCaddr>	00 09	U	37	46	FAULT	REMOTE TRANSMISSION DEVICE	Faulty
Z	<CCaddr>	00 08	U	38	46	FAULT	Data network	Faulty
Z	<CCaddr>	00 07 (00 10)	U	3C	46	FAULT	Power supply	Faulty
Z	<CCaddr>	00 07 (00 10)	U	3C	3D	FAULT	Power supply	Battery operation
Z	<CCaddr>	00 0A	U	4F	4F	ANOMALY	External fault	Active

### 7.2.3 State acknowledgment commands

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
Z	<CCaddr>	<Adf12>	R	mm	86	xxx	Acknowledgment (Fault)
Z	<CCaddr>	<Adf12>	Q	mm	mm	xxx	Acknowledged

## 7.3 Telegrams for all sector

### 7.3.1 Polling

Sector	DMS Adr	ADF1/2	Sep	Data A	Data B	Text A	Text B
S, Z, P	<CCaddr>	00 00	R	53	55	Polling	ON
S, Z, P	<CCaddr>	00 00	R	53	52	Polling	Perform
S, Z, P	<CCaddr>	00 00	N	53	3A	Polling	Begin
S, Z, P	<CCaddr>	00 00	N	53	3B	Polling	End



Siemens Building Technologies AG  
Alte Landstrasse 411  
CH-8708 Männedorf  
Tel. +41 1 - 922 61 11  
Fax +41 1 - 922 64 50  
[www.cerberus.ch](http://www.cerberus.ch)