ACCESS16 User Manual
Version 1.6

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INTRODUCTION

ACCESS16 by Ostiarius is a system for controlling building access using access cards, card readers and doors. ACCESS16 supports 1000 different access cards and 16 doors and card readers.

The core of the ACCESS16 system is a controller using the flexible MOV←16 architecture with two custom modules, the Access Card Interface and the Door Control Interface.

ACCESS16 is approved for high security applications, such as power plants, law enforcement and military.

OVERVIEW

An ACCESS16 installation looks like this:
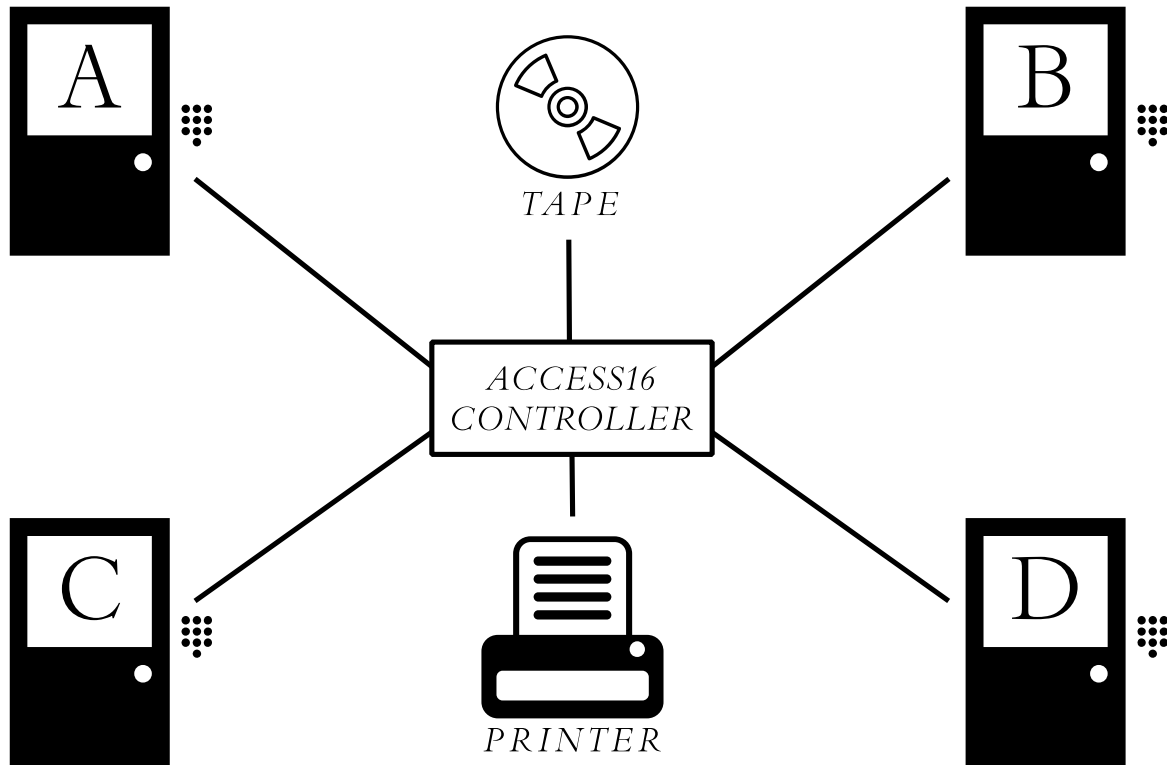
Each card reader and door are connected to the ACI and DCI modules in the ACCESS16 controller. Card readers and doors are named A to P.

The printer is used by the ACCESS16 controller for logging. Each access entry is logged to the printer with a timestamp. Both successful and unsuccessful entries are logged.

User feedback is given by setting the lights on the card reader. If the access entry is successful, the green light is turned on. If the PIN is invalid, the yellow light is turned on. For any other errors the red light is turned on.

The ACCESS16 system uses an internal access table which can be updated using commands on tape.

CONFIGURATION

The ACCESS16 system is configured using a command file on tape. The command file is used to modify the access table. There are also special commands to save and load the access table from the internal flash memory and to print out the access table to the printer.

The ACCESS16 CONFIGURATOR software can be used to create command files. This program is available separately.

The command file format can also be generated by third party systems, for example an existing system with a personnel database. The command file format is described in Appendix A – Data Types and Appendix B – Command File.

Access table

The access table contains one entry for each card, 1000 in total. Each entry consists of the PIN and the doors this card has access to (access mask). If the PIN is $0000 the card is not in use and does not have access to any doors.

The access table can also be stored in the flash memory module. The flash memory will retain its contents when power is lost or the system is restarted.

APPENDIX A – DATA TYPES

This appendix contains description of data types used internally in ACCESS16. These types are used in the command file and by the ACI.

Card ID

A card ID is a single word encoded as a 3 digit BCD. For example, the card ID 123 is encoded as $0123 and the card ID 555 is encoded as $0555.

Access mask

An access mask is a word which contains a list of 16 doors. Each bit in the access mask corresponds to a specific door.

Name	Value
A	$0001
B	$0002
C	$0004
D	$0008
E	$0010
F	$0020
G	$0040
H	$0080
I	$0100
J	$0200
K	$0400
L	$0800
M	$1000
N	$2000
O	$4000
P	$8000

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APPENDIX B – COMMAND FILE

The command file is a sequence of commands. If the command requires extra data, these words comes right after the command word.

Commands

Command	Value	Hex value
END	-1	$FFFF
ADD_ACCESS	-2	$FFFE
REMOVE_ACCESS	-3	$FFFD
SET_PIN	-4	$FFFC
CLEAR_ACCESS_TABLE	-13	$FFF3
PRINT_ACCESS_TABLE	-14	$FFF2
READ_FROM_FLASH	-15	$FFF1
WRITE_TO_FLASH	-16	$FFF0

END

This marks the end of the command file. The last command in a command file must be the END command.

ADD_ACCESS

This command updates the access mask for one or more cards by adding bits to the access mask. The input is a sequence of card ID/access mask pairs. The bits in the access mask in the input is added to the access mask for that card ID in the access table.

The end of the list is indicated by a new command.

REMOVE_ACCESS

This command works the same way as the ADD_ACCESS command, except that the bits in the access mask in the input are removed from the access mask in the access table.

SET_PIN

This command changes the PIN for one or more cards. The input is a sequence of card ID/PIN pairs. Note that PIN $0000 indicates that the card is no longer in use.

The end of the list is indicated by a new command.

CLEAR_ACCESS_TABLE

This command clears the entire access table.

PRINT_ACCESS_TABLE

This command prints the access table. For each card in use, the card ID and the access mask is printed. Note that the PIN is not printed.

READ_FROM_FLASH

This command reads the access table from the flash memory. Any changes in the access table that has not been written to the flash memory will be lost.

WRITE_TO_FLASH

This command writes the access table to the flash memory. Only cards that are in use are written.

Example

Here is an example of a command file which adds access for two cards, removes access for two cards, sets PIN for one card, writes the new access table to the flash memory and prints the new access table.

Command	Card	PIN/Doors	File data
ADD_ACCESS	250	AB	$FFFE
	251	AI	$0250
			$0003
			$0251
			$0101
REMOVE_ACCESS	250	H	$FFFD
	252	H	$0250
			$0080
			$0252
			$0080
SET_PIN	789	1234	$FFFC
			$0789
			$1234
WRITE_TO_FLASH			$FFF0
PRINT_ACCESS_TABLE			$FFF2
END			$FFFF

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