

# General Interface Proposal

As of January 16, 2000

(Windows 95/98 version)

**Subject: General Interface between the Self-Storage Management Software (Management Software) and the Gate Access Control Software (Gate Software).**

The following specifications are the latest compilation of ideas and suggestions for a General Interface. They are submitted for consideration to all parties involved.

## MANAGEMENT SOFTWARE'S RESPONSIBILITY:

1. Create a text file, which will contain information needed by the gate software to update the gate hardware.

If the self storage management software company would prefer to use their own file format, the gate software company would write a conversion program that will extract the data and reformat it according to General Interface Specification format. The conversion program will execute prior to processing the text file in the General Interface format.

2. Report, to the manager, any failures to process the text file by the gate software.

3. The management software should also have the ability to recreate the entire Gate Access Control's database.

## GATE SOFTWARE'S RESPONSIBILITY:

1. Process the text file containing the necessary changes to the gate system.

2. Report the results of the text file processing.

3. Make the main gate software program available to the user.

### FILE STRUCTURE:

The Gate Access Control Software should be able to handle both a fixed or variable database structure.

**Fixed data base-** The gate system is initialized with all the units in the facility being added to the gate system, both rented and vacant. After the initial data dump, the data base is updated by changing units from vacant to rented, rented to vacant, or changing the data in the fields of a particular record.

**Variable data base-** The gate system is initialized by adding only the rented units. After the initial data dump, the data base is updated by adding units, deleting units, or changing the data in the fields of a particular record.

**Note: A unit can not be added if the unit already exists, a unit can not be deleted if it does not already exist, and a unit number can not be changed (use delete than add a unit).**

### SPECIFICATION:

**Specification 1a:** The Gate Access Control Software, as part of the INSTALL process, will create a subdirectory called C:\GATE, which will contain three files UPDATE.EXE, DEMCO.EXE and INI\_GATE.EXE.

UPDATE.EXE is the program to call to process the CHANGE.DTA file.  
DEMCO.EXE is the Gate Access Control System's main program.  
INI\_GATE.EXE is the program to call to initialize Gate Access Control System.  
This initialization is usually needed before reconstruction of the complete database into the gate hardware.

**Specification 2:** The Self Storage Management Software will create the change

record or records and locate them in the C:\GATE\CHANGE.DTA file. The management software must not only have the ability to create the changes, but be able to completely recreate the entire database. Recreating the entire database is needed to initialize a new or replaced gate system. The management software will turn control over to the gate update software by calling C:\GATE\UPDATE.EXE.

Specification 3: The UPDATE.EXE program, when executed, will first rename CHANGE.DTA to CHANGE.OLD, then proceed to process CHANGE.OLD. After process CHANGE.OLD, the UPDATE.EXE program will create CHANGE.UPD, which will contain the process results for each record processed.

**IMPORTANT:** The management software can not append to or create CHANGE.DTA, until the last CHANGE.DTA has been renamed by the UPDATE.EXE program.

**NOTE:** CHANGE.OLD and CHANGE.UPD can be read using a text editor such as Window's NOTEPAD.

Specification 4: The update program should always terminate, even if there is an error encountered.

Specification 5: It is the responsibility of the management software, after the update program has completed processing the CHANGE.DTA file, to read the CHANGE.UPD record, and handle the results of the PROCESSING RESULT CHARACTER, especially if an error is encountered.

Specification 6: The record length of CHANGE.DTA **should not** be considered as fixed, but set by looking for the Carriage Return/Line Feed characters. This allows for longer record lengths in the future.

Specification 7: The gate update program can not process a CHANGE.DTA record to change a Unit Number. To change a unit number, delete an existing

unit, then add a new Unit Number. The system will return an error if you try to process a CHANGE.DTA record with a non-existing unit number.

Specification 8: The gate update program will processes multiple changes to a CHANGE.DTA record. For example, lock out an access code, and put the code on alert.

Proposed basic file format for CHANGE.DTA: This format was chosen for readability, logical ordering, and completeness.

Operation Code	(1 char)	<u>A</u> dd, <u>C</u> hange, <u>D</u> elete or blank
Unit Number	(10 char)	Alphanumeric, Right Justified
Unit Status	(1 char)	<u>V</u> acant, <u>R</u> ented, <u>D</u> elinquent,
<u>C</u> ompany,		<u>X</u> damaged/unusable, "blank"
Customer/Link Number	(4 char)	Numeric, Right
Justified		
Password	(10 char)	Alphanumeric, Right Justified
Time Zone/Period Code	(2 char)	Numeric, Right
Justified		
Keypad/Access Zone	(2 char)	Numeric, Right
Justified		
(Start Time)	(the same 4 char. as above)	
End Time	(4 char)	Numeric
Lockout Code	(1 char)	<u>L</u> ocked out, <u>N</u> ot Locked out,
"blank"		
Alert Code	(1 char)	<u>A</u> lert, <u>N</u> ot on Alert, "blank"
NAME	(30 char)	Alphanumeric Left Justified
Processing Result	(1 char)	Alphanumeric "blank" before
processing		
CR	(1 char)	
LF	(1 char)	

(69 bytes total)

**Note:** The first 67 characters are fixed in accordance with the General Interface specification.

**Caution-**Some ASCII READ functions will evaluate the CR/LF and return only the LF, yielding a record length of one character less than expected.

Proposed operations code: The management software will place an A, C, D or a BLANK in this field to instruct the gate software to process the record as an Add, Change, or Delete.

1. Add or Delete means to add or remove this customer/unit # from the gate system.
2. Change means to change the content of one or more fields in this unit's records.
3. If the original record to be processed needs converting to the General Interface Specification format, and the original record does not contain an Operation Code, the conversion program will create the operation coded field, but leave this field blank. The update program will handle a BLANK in the operation code field as follows:
  - 3a) If a unit does not exist in the update program's database, the blank will be changed to an Add and processed.
  - 3b) If unit does exist in update program's database, the blank will be changed to a Change and processed.
  - 3c) Note: If no operation code is present in the original record, a unit can only be removed by initializing the gate system and adding all existing units.

Proposed unit number: This is a right justified alphanumeric field containing the unit designation. Any other limitations to this field will be specified between the particular interfacing parties.

Note: A unit number can not be changed using the Change operation code. To change a unit number, use the Delete operation code to delete the old unit, then use the Add operation code to add the new unit.

Proposed unit status: This field will contain either a V, R, D, C, X or "blank" representing Vacant, Rented, Delinquent, Company, Damaged or not supported (see Lockout Code). Company and Damaged units will be handled as if Vacant.

NOTE: Some systems require that all possible units in the site be defined weather rented or vacant. In that case, Rented means to fill in all fields of the record for the unit with the information provided, and Vacate means to erase or ignore all fields in the record for the unit. After the initial data dump, which all spaces are added weather rented or vacant, all further updates of the data will be in the form of a "CHANGE" record. The gate updating program will have to be able to handle the case where the vacant units are totally removed from the gate database, and where vacant means to remove or ignore the units data fields but leave the empty record in the gate data base.

Proposed Customer/Link Number: If there is a number in this field, the gate system will link this unit with all other units with the same Customer/Link number. To break a unit from a link or to link a unit to other units, use the "CHANGE" operation with a different customer or link number. Any other limitations to this field will be specified between the particular interfacing parties.

Proposed password: This is a right justified numeric field containing the unit's access code/password. Any other limitations to this field will be specified between the particular interfacing parties.

NOTE: Some system allow a customer who rents more than one unit to use one access code to enter the facility and open any of their spaces. For the gate systems to be able to handle this situation, the management software will have to

use the customer/link number to convey this situation. If the link number is not used, the gate system will issue an ACCESS CODE ALREADY EXISTS processing error for that record if a duplicate access code is encountered.

Proposed time zone code/time period code (start time): This field will contain a two-digit number from 0 to 99. This field is to satisfy the needs of the gate access control system. Any other limitations to this field will be specified between the particular interfacing parties.

Proposed keypad zone/access zone (start time): This field will contain a two-digit number from 0 to 99. This field is to satisfy the needs of the gate access control system. Any other limitations to this field will be specified between the particular interfacing parties.

OR

(Proposed start time): Some systems require a unique time period to be associated with each access code. The Start Time will be substituted for the four bits in the previous two fields.

Proposed end time: Some systems require a unique time period to be associated with each access code. The start time will be found in the time zone and keypad zone field, and the end time in this field. For example 7 AM to 8:30 PM would be 0700 in the start time field, and 2030 in the end time field.

Proposed Lockout code: This field will contain either an L, N or "blank" representing Locked Out or Not Locked Out, or not supported.

Specification: A Password should be considered locked out if the Lockout Code is "L". The Password should not be locked out if the Lockout Code is "N". If the Lockout Code is "blank", use the Status byte ("D"=delinquent) to lock out a Password.

**Specification:** This field will override the Status byte ("D"=delinquent).

**Proposed alert code:** This field will contain either an A, N, or "blank" representing Alert, Not on Alert, or "blank" not supported.

**Proposed name:** This is a left-justified alphanumeric field containing the renter's name. This field must contain printable characters only. Any other limitations to this field will be specified between the particular interfacing parties.

**Proposed PROCESSING RESULT CHARACTER:** This one digit alphanumeric field will contain the results of the processing of the record. This digit will be blank when the record is presented for processing by the management software, and filled in by the gate software.

The processing results are defined as:

\*)Record processed without error

A)Unable to process record, record length error or CR/LF not found

B)Unable to process record, no unit number

C)Unable to process record, no record to process (create dummy

CHANGE.UPD)

D)Unable to process record, unable to communicate with controller

E)Unable to process record, error in operations code field

F)Unable to process record, error in unit number field

G)Unable to process record, error in unit status field

H)Unable to process record, error in customer/link number

I)Unable to process record, error in password field

J)Unable to process record, error in time zone/period code field

K)Unable to process record, error in keypad/access zone field

L)Unable to process record, error in end time field

M)Unable to process record, error in lockout code field

N)Unable to process record, error in alert code field

O)Unable to process record, error in name field, non printable character



- P)Unable to process record, trying to add an access code that already exists
- Q)Unable to process record, trying to delete/change an access code that does not exist
- R)Unable to process record, can not find a customer/link number to link/unlink this record
- S)Unable to process record, existing date base matches CHANGE.DTA record, no fields to change.\*
- T)Unable to process record, trying to add a unit that already exists, or delete a unit that does not exist, or change a unit number.
- U)Record processed, access code already on or off alert.
- V)Unable to process record, can not change a Vacant unit to a Vacant unit or  
can not change a Company unit to a Company unit or  
can not change a Damaged unit to a Damaged unit
- W)Unable to add Access Code, no more room for new spaces.

\* Some management software intentionally asks the gate software to process records, which have already been processed. This procedure is needed on some systems to sync the gate hardware with the management software's database. The Demco gate access control system does not need to be put in sync in this manner. If the management software uses this procedure, the gate update program will place an error code of "S" at the end of the CHANGE.UPD record, but will not stop the processing to notify the manager of the error.

Specification: The PROCESS RESULT BYTE, will be left blank in the CHANGE.DTA record, and MUST contain a character in the CHANGE.UPD record.

## **Demco's Access Control System restrictions to the General Interface.**

Demco will support two extra fields that are not required for General Interface Specification record format:

Unit Size	(4 char)	Numeric
Credit Card #	(16 char)	Numeric

These fields should be added at the end of the CHANGE.DTA record (after the PROCESSING RESULT CHARACTER and before CR/LF end of record mark).

**NOTE:** If the Unit Size and Credit Card Number are not provided, Demco's software will have provisions for manually entering this data.

Operation Code- A, C and D will be supported.

Unit Number- Any system accepted. Must be a printable character.

Unit status- Delinquent will lock out the customer, "blank" will unlock the customer, Vacant and Rented (A change in unit status from Rented to Vacate, will be handled by blanking out all fields of that record, and a change in unit status from Vacate to Rented, will be handled by filling in all fields of that record), X unusable/damaged and Company will be treated as if vacant units.

Customer/Link number- Used to ascertain that two or more units share a password/Access code.

Password- limited to 4, 5, 6 or 7 digit access codes.

**IMPORTANT--**Each unit must have a unique password, or if the password is duplicated, the unit must be linked to other units by using the LINK/CUSTOMER number.

Time Zone/Period Code- Allowable Time Zones 0, 1, 2, 3, 4, 5, 6, 7.

**IMPORTANT**--Time Zone 0 will lockout the customer. This will take precedence over the lock out field and the Delinquent bit in the Unit Status.

Keypad/Access Zone- Not used.

End time- Not used

Lockout Code- Completely Supported

Alert Code- Completely Supported.

Name- Any legal Alphanumeric character recognized.

### **Additional features of the Demco General Interface.**

Demco will also provide one additional file accessible to the user, which is CHANGE.LOG. CHANGE.LOG contains all of the CHANGE.UPD records processed for today appended together. CHANGE.LOG will be overwritten when a change of date is sensed.