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SW3 Event Help

Revision 462

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Revision History

Version	Date	Person	Reason For Changes
457	2021-3-24	MTL	General Update, correct links Match version 457
458	2021-6-07	MTL	Add Event/Event, EXE Event, Timed Events
459	2021-9-30	MTL	Expand Setup and Card set events
460	2022-7-10	MTL	Expand on status
460a	2022-9-15	MTL	Expand on status
460b	2022-10-25	MTL	Change card to token or user Expand on Z parameters
461	2023-08-15	MTL	Events on multi-PC
462	2024-01-31	MTL	Add reader / Bio events

CONTENTS

1 AIM

This help file serves the help manual to SoftWin version 3 (SW3) and can be access via the program be selecting help.
The general section described the event mechanism of SW3.
This is followed by the event structures that can be set to be triggered as required:

      Counters: Increment or decrement counters on events.
      Event-Events: Generate events on event triggers.
      Exe events: Start programs or batch files on event triggers.
      Timed events: Generate events on time schedules.
      Timers: Start, stop, cycle on events.

The document SCS_sw3_EmailReport.how2 gives examples using Timed event that triggers an Exe event to Run and a report and Timer Event to start Email.
The document SCS_sw3_Backup.how2 gives example using Timed event that triggers an Exe event to do a backup.

In this document:
      Token is used for Tag / Card – it is allocated to a user.   Older versions use the word Card.
      User is the person (profile) requesting access.   Older version used the word Card holder.
      Operator is the person @ the PC using SW3.   Older version used the word User.

2 EVENTS

Events are messages that are generated by occurrences that happen in the system (e.g. inputs change, counters change, Tokens are enabled, Tokens are reported out-of-area, etc.
Some events are automatically generated (e.g. if the event USER OUT-OF-AREA is received from a controller, access checks if this is true. If the User in fact is not out of area, it automatically generates an event USER ENABLED.

Events can increment and decrement counters, can trigger new events and can start programs.
This is achieved by setting event triggers that are compared to events occurring, and when the trigger matches the event occurred, counts are in/decrements, new triggers generated, and programs started.

Events are used as triggers and/or are generated by the following settable (by Administrators) program functions as listed above: Counters, Event-Event, Exe, Timed, Timers.

An event is generated by posting a message on the notice board (by the system or by the above), and consists of 7 parts:

Time Date		This is used for logging functions and presently does not affect counters or events.
Type	**t**	The event type defines what kind of event occurred (e.g., Reader, Input, Operator, Counter),
System	**n**	Defines which one of the Type (e.g., which Reader, Input, Operator, Counter).
Xref	**x**	Some event types use this to give additional information.
		When used with readers, it indicates a specific User (if zero, all Users).
Status	**s**	What event occurred, e.g., out-of-area, level change, off-line, maximum reached.
Value	**v**	Some event types use this value to indicate more information,
		e.g. input change –indicates the level of the input change (1 or 2).
		If value is zero, it is ignored for the event match.
		In reader event types it can be set with the User trigger group that must match the event (if zero, the User trigger group is ignored).

           User **access control events** of tokens in the user database (20 … 34, 39) generated by the system set the v field with the User trigger group. **Indicated as Vtg in this document**.
           Trigger group can be used for special triggers in generating new events, incrementing counters, sending SMS, etc.

Alarm	**a**	When the PC receives an event, it is checked whether it is in alarm.
		Certain events are always alarm (e.g. off-line) and others on only on set time (e.g. inputs).
		When alarm is detected, the event alarm field is set to 2 and when normal it is set to 1.
		None is set to 0 and alarm accepted is set to 3.

Zx   **z.** Certain events use additional z1 to z7 parameters that contain additional data.
The vending and long Token number data are stored in these parameters.
In certain events, parameters Z2 to Z5 contain Token data. <mark>Indicated as Ztn in this document</mark>.

   Z2 the decimal number of the first 6 (hexadecimal) digits
   Z3 the digits 7 to 12
   Z4 the digits 12 to 18
   Z5 the last 2 digits.
   -1 value in Z2 to Z5 indicates no digits.
   In the activity display, the Z2 parameter is displayed as the hex string calculated from Z2 to Z5.

Certain events set specific data in Z parameters. <mark>Indicated as Z? in this document</mark>

The description for Type and Status used by the system are in the tables TYPE and STATUS in database REPORT.

E.g.: Reader 5, User 123, Entered	t1, n5, s22, x123
	Reader = type 1, System Reader 5, Entered = Status 22, X = User reverence number
E.g.: Input 12, Changed to Closed	t2, n12, s50, v1
	Input = type 2, System Input 12, Level Changed = Status 50, V = Level
E.g.: Controller 6, Offline	t4, n6, s2
	Controller = type 42, System Controller 6, Offline = Status 2

When the Softcon program ACCESS.EXE starts running, it generates the event:
   t4 n0 s3 x0 v0   Controller 0, powered up.
This can be used to reset APB, count the number of times it started, etc.

When access receives the event t4 n0 s3 x0 v0, it automatically generates the event:
   t4 n? s6 x0 v0   Controller x, request status for each controller.

Time Date.   This is used for logging functions and presently does not affect counters or events.

Type.   The event type defines what kind of event occurred:
   1   Reader - data received from readers or data sent to readers.
   2   Input - change in monitored inputs or the set-up.
   3   Output - output being changed.
   4   Controller - going on/off-line, powered up, set-up.
   5   Camera.
   6   Counter - counters changing value, or reaching minimum or maximum.
   7   Timer.
   8   Command-button (DDE event message generator). An event string is sent.
   9   EXE-button. A program is started.
   10   System.
   11   Vend base.
   12   Vend Item.
   13   Asset receivers.
   14   Vender.
   15   Asset Tag.
   16   GSM.
   17   Mux.
   18   PC.
   101   Photo.
   102   Database value, reader provides reference (string field gives ID to ACCESS.SQL file).
   103   Drawing link.
   500+   Database value (string gives ID to ACCESS.SQL file).

System.   Defines which reader, input, output, counter or controller.

Status.   What event occurred, e.g. out-of-area, level change, off-line, maximum reached, depending on type, e.g.
   Readers: Out of area, Out of time, Access Granted, Token enabled, Token disabled.
   Inputs: Level change.
   Outputs: Level change.
   Counter: Minimum reached, count changed, maximum reached.
   Controllers: On, off-line, powered up.
   The complete status list is (unless indicated as level, i.e. is in the state already, the status is edge, i.e. it occurred now):

Controller events:

1   On-line.
2   Off-line.
3   Power-up.
4   Set-up.

t4 n? s4 x0	All set-up
t4 n? s4 x1	Set RTC
t4 n? s4 x2	Set holidays
t4 n? s4 x3	Time zones
t4 n? s4 x10	ACCESS time group
t4 n? s4 x11	RD1, RD2 activate
t4 n? s4 x12	PIN1, PIN2 activate
t4 n? s4 x13	DOOR 1, DOOR 2 open
t4 n? s4 x14	Input time groups
t4 n? s4 x15	Aux Output time group
t4 n? s4 x100	All other set-up

5   ~~Reset~~. Idle
6   Request status.
7   Token dB reset   Changes dB type to zero and back to clear
8   Time sync.   t4 n? s8 xdate vtime is logged when starting SCS_Client with /cntrltime
9   CntrP time sync error.   t4 n? s9 xdate vtime is always logged
10   SCS_Server off-line.   t10, xref = Operator, n=PC a1
11-14   Spare

Token / dbEvents (Vtg):   The (10??) Generated by translator from controller, creates ?? if correct.

15(1015) Token Unknown Pin
16   Token Expire Pending
17   dB Write (alter).   t10 s17 n0 vsearch-ref xsearch-data z1data-ref z2data
         Table DBT_ALT_DB in access.mdb references the search and data fields.
             e.g. _CD_REF 1, F_CD_STATUS 2, F_CD_COUNT 3.
             e.g. to set the count of Token 1 to 10: event: t10 s17 n0 v1 x10 z13 z210
             Thus, v where to search, x for what, z1 which data to change, z2 to what

18(1018) Token Absent error.
19   Token set properties.   t10 n0 s19 xref vtrigger-grp z1area-group z2time-group z3status (change is audited)
         If v>0, set all Tokens with matching trigger group.
20(1020) Token Out-of-area.
21(1021) Token Out-of-time.
22(1022) Token Entered.
23   Token enabled.
24   Token disabled.
25(1025) Token Expired.
26(1026) Token Wrong PIN.
27   Token set-up.   x? sends card ?   x0 ~~does setup then (error)~~ all cards   (error to be corrected)
28   Token at reader (level).
29   Token APB error.
30   Token Out of count.
31   Token Late entered.
32(1032) Token Captured.
33   Token No host.
34   Token Strictly from error.
35(1035) Token Not found (Ztn).
36   Set-up APB/strict.
37   Set-up out count.
38   Set-up expire.
39(1039) Token Duress.
40   Guest (MVG) request (Ztn).
41   Guest (MVG) reply, value=error code where > 0 pay (Ztn).
42   LCD display line (V is the line number, data as parameter).
43   Parking exit Fare.
44(1044) Token Wrong format.
45(1045) Token Wrong facility (Ztn).
46(1046) Token ATB error.
47   Park entry.
48   Park exit.
49   Token not captured.

I/O events:

50   Level changed.
51   In value (level).
52   Operation change (by time group).
53   Do change (to/from external).

Counter events:

70   Maximum (level and edge).
71   Minimum (level and edge).
72   Available (level and edge).
73   In maximum.
74   In Minimum.
75   In Available.

Timer events (See timers for details):
- 80   Timer set.
- 81   Timer start.
- 82   Timer stop.
- 83   Timer status.
- 85   Timer Started.
- 86   Timer Stopped.
- 87   Timer Timed-out.
- 88   Timer Cycling.

PC events:
- 99   Check PC.   t18 n? s99   when * with events, sets which PC does the task (e.g. FP add).

Operator events:
- 100   Operator changed.
- 101   Accept alarm.
- 102   Run report.   x is the report number.
- 103   Operator controller set-ups.   t4 nCntrl s103 xref).
- 104   Operator controllers reset.   t4 nCntrl s104 xref.
- 105   Backup.   used as trigger to exe event.
- 106   Operator change DT.   t10 nPC s106 xoperator voldD z1_oldT.
- 107   Dist Server change DT.
- 108   Dist Server change DT error.
- 109   Visitor registered   t10 nPC s109 xUserRef vHostRef z1CurrentOperator z2VisRef

General events:
- 130   Buzzer on.
- 131   Buzzer stop.
- 132   APB reset.   n0 sets last APB reset (General setup).
                          Users that badge with APB error and last moved before last reset, are corrected
- 133   RAM refresh.
- 134   Net Ping.
- 135   User status check.
- 136   User expiry check.
- 137   Run exe event.
- 139   Set area count.   x0 all User, or specific; v0 default reset count value, else value.
- 140   Start RAM refresh.
- 141   Reset period count.   x and v as 139.
- 142   Reset period status.   x0 all Users, or specific; v0 status to alt, v1 status to normal.
- 143   Security shut down.
- 144   Server off-line.   t10, alarm.
- 145   Server on-line.   t10.
- 146   Operator terminates system.   t10, xref = Operator, n=PC, v=application.
- 147   Operator logged on.   t10, xref = Operator.
- 148   Operator logged off (default logon).
- 149   Password change.
- 150   Illegal password change.
- 151   Unsuccessful password change.
- 152   Illegal logon attempts.
- 153   Encoding Token.   t10, xref=Operator, value=application, z1=User ref programmed.
- 154   Printing Token.   t10, xref=Operator, value=application,
                  z1=User ref printed, z2=batch print count, z3=print reason, z4=material batch
- 155   LCD display.
- 156   Wrong Comms Interface version.
- 157   System Auto Log-off.
- 171   Token Search - passed.
- 172   Token Search - failed.
- 173   Token Search - timeout

Camera control events (reserved for future use):
- 200   PTZ power.
- 201   Iris control.
- 202   Camera select.
- 203   Camera Monitor select.
- 220   PTZ zoom.
- 221   PTZ focus.
- 230   PTZ PAN.
- 240   PTZ tilt.
- 250   PTZ PAN/TILT.
- 251   PTZ PAN/TILT stop.
- 252   PTZ position set.
- 253   PTZ position go to.
- 260   PTZ alarm set.
- 261   PTZ alarm reset.

External system link events:
- 270   Ext Access Log.
- 271   Ext Access request.
- 272   Ext Access answer.
- 273   Ext Access Log.

Vending events (not logged): <mark>see SCS_sw3_Vend.help for z parameters</mark>
- 300   Vend show funds.
- 301   Vend show item.
- 302   Vend Funds error.
- 303   Vend do.
- 304   Vend request.
- 305   Vend show value.
- 306   Vend show item.
- 307   Vend add cash.
- 308   Vend item not found.
- 309   Vend kM check (ok)

- 328   Vend Vended V2
- 329   Vend Vended V3
- 334   Vend kM check (ok) V2

Vending events (logged): <mark>see SCS_sw3_Vend.help for z parameters</mark>
- 350   Vend PC add cash.
- 351   Vend cash added.
- 352   Vend filled.
- 353   Vend maintained.
- 354   Vend cleaned.
- 355   Vend vended.
- 356   Vended insufficient.
- 357   Vended Token unknown (<mark>Ztn</mark>).
- 358   Vended Item unknown.
- 359   Vend filling due.
- 360   Vend maintenance due.
- 361   Vend Clean due.
- 362   Vend Clear done.
- 363   Vend PPOS sale (<mark>Ztn</mark>).
- 364   Vend PPOS take-on.
- 365   Vend PPOS cash-up.
- 366   Vend PPOS Entry.
- 367   Vend PPOS Exit.
- 368   Vend PPOS Take-on.
- 369   Vend PPOS Cash-up.
- 372   Vend in progress

Distribution server events:
- 400   DistrServer Start.
- 401   DistrServer Done.
- 402   DistrServer Failed.
- 403   DistrServer Modem Connected.
- 404   DistrServer Connection Failed.
- 405   DistrServer Connection Done.
- 406   DistrServer Start Listener
- 407   DistrServer Received Data.

SMS events:
- 450   SMS Sent.
- 451   SMS Remove on timeout (messages in send queue are removed after time-out, not sent due to error).
- 452   SMS Remove Stop (messages in send queue are removed after port is stopped).
- 453   SMS Error.
- 454   GSM: Incoming call.
- 455   GSM: Initialization.
- 456   GSM: Token not found.
- 457   SMS: Start (has no effect).
- 458   GSM: Start (has no effect).

Email events:
- 460   Email: Sent.   t10, n=computer ref, x=Operator ref, v=email_to ref
- 461   Email: No dial-up connection.
- 462   Email: No SMTP connection.
- 463   Email: Send error.
- 464   Email: Operator close App.
- 465   Email: Attachment error.
- 466   Email: Start (has no effect).

Modem events:

500	Scheduled link successful.	Schedule reference in v.
501	Scheduled link error.	Schedule reference in v.
	Error in z1 (see SCS_CntrlModem logged messages).	
502	Manual link successful.	Schedule reference in v.
503	Manual link error.	Schedule reference in v1. Error in z1 as above.
504	Modem/Cntrl overrun.	

Fingerprint events:

510	FP Add Record	(see **FP events** for details).
	If more than 1 PC, the algorithm requires * with a trigger t18 n? s99.	
511	FP Add Record Done.	
512	FP Remove Record.	
513	FP Remove Record Done.	
514	FP Download db.	
515	FP Download dB Done.	
516	FP Clean db.	
517	FP Clean dB Done.	
518	FP Enrol System.	
519	FP Enrol System Done.	
520	FP Enrol User.	
521	FP Error.	
522	FP Reader Setup.	
523	FP Reader Setup Done.	
524	FP Logs.	
525	FP Logs done.	
526	Bio Set Date/time.	
527	Bio Set Date/time done.	

Video capture events:

530	Video capture do (see **video events** for details).
531	Video capture done.
532	Video capture error.

Face events:

551	3D Face Error.
552	3D Face Add record.
553	3D Face Add record done.
554	3D Face Remove record.
555	3D Face Remove record done.
556	3D Face Download dB.
557	3D Face Download dB done.
558	3D Face Clean dB.
559	3D Face Clean dB done.
560	3D Face Enrol system.
561	3D Face Enrol system done.
562	3D Face Enrol User.
570	Bio Download dB.
571	Bio Download dB Start.
572	Bio Download dB Progress.
573	Bio dB counts.
574	Bio dB counts done.
575	Bio Serial number.
576	Bio Serial number done.

Asset events:

600	Asset Violation.
601	Asset Violation Cleared.
610	Asset Issued.
611	Asset Returned.
612	Asset Booked.
613	Asset Booking removed.
614	Asset Booking expired.
615	Asset Late Return.

Controller events:

1020	Out-of-area.
1021	Out-of-time.
1022	Entered.
1025	Expired.
1026	Reversed.
1027	Token set-up.
1050	Level change.

STATUS		
REFERENCE	DESCRIPTION	DESCR_ENG
450	SMS sent	SMS sent
451	SMS remove start on time-out	SMS remove start on time-out
452	SMS remove stop	SMS remove stop
453	SMS error	SMS error
454	GSM Incoming Call	GSM Incoming Call
455	GSM Initialization	GSM Initialization
456	GSM Token Not Found	GSM Token Not Found
457	SMS Send	SMS Send
458	GSM Send	GSM Send
460	E-mail: sent	E-mail: sent
461	E-mail: No dial-up connec	E-mail: No dial-up connec
462	E-mail: No SMTP server connect	E-mail: No SMTP server connect
463	E-mail: Send error	E-mail: Send error
464	E-mail: User close app	E-mail: User close app
465	E-mail: Attachment error	E-mail: Attachment error
466	Email : Send	Email : Send
467	z467	z467
478	z468	z468

Depending on the version of the SW, certain status shown above may not exist is selection lists.

These can be added by editing table status in c:\softwin3\database\ Report.mdb.

When requiring events be generated to trigger another event (e.g. timed event to trigger exe event), use any event that does not do specific function.

When the Softcon program ACCESS.EXE starts running, it generates the event:

    t4 n0 s3 x0 v0   Controller 0, powered up.

This can be used to reset APB, count the number of times it started, etc.

When access receives the event t4 n0 s3 x0 v0, it automatically generates the event:

    t4 nx s6 x0 v0   Controller x, request status for each controller.

Reader Events Status

Status	Description
15	Unknown PIN
16	Expire pending
18	Absent error
20	Out-of-area
21	Out-of-time
22	Access granted
23	Token enabled
24	Token disabled
25	Expired
26	Wrong PIN
29	APB error
30	Out of count
31	Late
32	Capture
33	No host
34	Strict error
35	Not found
39	Duress
40	MVG Request
41	MVG Reply
42	Display Line
43	Parking fare
44	Token wrong format
45	Token wrong facility
46	ATB error
47	Park Entry
48	Park Exit
49	Not captured
155	LCD display
171	Token search passed
172	Token search failed
173	Token search timeout

Status	Description
270	Ext Access Log
271	Ext Access Request
272	Ext Access Answer
300	Req funds
301	Show item
302	Funds error
303	Do vend
308	Vend item not found
309	Vend pump km OK
328	Vend vended V2
329	Vend vended V3
334	Vend pump km OK V2
351	Cash added
372	Vend in progress
510	FP Add Record
511	FP Add Record Done
512	FP Remove Record
513	FP Remove Record Done
514	FP Download DB
515	FP Download DB Done
516	FP Clean DB
517	FP Clean DB Done
518	FP Enroll System
519	FP Enroll System Done
520	FP Enroll User
521	FP Error
522	FP Reader Setup
523	FP Reader Setup Done
524	FP Logs
525	FP Logs Done
526	Biometric Set Date/Time
527	Biometric Set Date/Time Done

Status	Description
551	3D Face Error
552	3D Face Add Record
553	3D Face Add Record Done
554	3D Face Remove Record
555	3D Face Remove Record Done
556	3D Face Download DB
557	3D Face Dowload DB Done
558	3D Face Clean DB
559	3D Face Clean DB Done
560	3D Face Enroll System
561	3D Face Enroll System Done
562	3D Face Enroll User
570	Biometric Download DB
571	Download DB Start
572	Download DB Progress
573	Biometric DB counts
574	Biometric DB counts done
575	Biometric serial number
576	Biometric serial number done
1015	Reader unknown PIN
1018	Reader absent error
1020	Reader-out-area
1021	Reader-out-time
1022	Reader entered
1025	Reader expired
1026	Reader wrong PIN
1032	Reader captured
1035	Reader Token not found
1039	Reader duress
1044	Reader wrong format
1045	Reader wrong facility
1046	Reader ATB

2.1   EVENT ALTER DATABASE (ADVANCED)

The alter database event (s17) alters data in any field in any table of any database:
   t10 s17 n0 vsearch-ref xsearch-data z1data-ref   z2data
v tells where to search, x tells for what, z1 tells which data to change, z2 to what

Such event is typically set in the **event-event set-up**.

Alter database sets a reference number (e.g. 1, 2, 3) used in the event, to a database field reference.
These database field references are contained in table fields in c:\softwin3\config\database.mdb For example:
   1   F_CD_REF
   2   F_CD_STATUS
   3   F_CD_COUNT
To set the count of User 123 to 10: event: t10 s17 n0 v1 x123 z13   z210
      hence   t10 s17 n0 vF_CD_REF   x123 z1F_CD_COUNT   z210

3 COUNTERS

Numerous system counter are available in the system – See SCS_Client

System counters (up to 65000, set in the DATABASE set-up files) keep counts in accordance to set events and can be used in displays and can control outputs and be logged when limits (set maximum and zero) are reached.
These counters are set-up via the **COUNTER SET-UP** menu with the data listed below.

Name. A descriptive name given to the counter to identify it.

Now. The current value of the counter. The value can me set manually and is automatically updated when it increments or decrements as a result of an event trigger.

Date Time. The last time the counter now value changed.

Min. A pre-set minimum, equal to or below which a counter minimum event is automatically generated when the counter now values changes. The colors of name and now value is set to be in blue when the counter is in minimum.

Max. A pre-set maximum, equal to or above which a counter maximum event is automatically generated when the counter now values changes. The colors of name and now value is set to be in red when the counter is in maximum.

Rep Min. When the counter value changes and is minimum, the change is set to be logged, displayed, and printed and to trigger other events (or counters). See Event Reporting.

Rep Now. When the counter value changes and is not minimum or maximum, the change is set to be logged, displayed, and printed and to trigger other events (or counters). See Event Reporting.

Rep Max. When the counter value changes and is maximum, the change is set to be logged, displayed, and printed and to trigger other events (or counters). See Event Reporting.

TG Min. When the counter changes and is minimum, the time-group setting sets when the event is an alarm and when the timed report function is active. See event reporting.

TG Now. When the counter changes and is not minimum or maximum, the time-group setting sets when the event is an alarm and when the timed report function is active. See event reporting.

TGMax. When the counter changes and is maximum, the time-group setting sets when the event is an alarm and when the timed report function is active. See event reporting.

Events that result in the counter incrementing or decrementing are **Added** via the property sheet (right click on the counter). The trigger event is set with **Type**, **System Item** number, **Status**, **Xref**, **Value, Alarm** and Z1, Z2 parameters. See events.
The value by which the counter is incremented is indicated with a plus (e.g. +1) or decremented with a minus (e.g. –2).

A counter can be a **sum** of counters by setting an & in the +- column. & is only valid for counters. Any event can serve as a trigger. Only the now counts of counters in the triggers with & are used to calculate the value of the counter, all other triggers are ignored in the calculation. The event generated is counter maximum, available or minimum.

To set the value of a counter:

Event: **Type** Counter, **system** Counter number, **Status** Level Change, **Value** xyz
e.g. using the event simulator – set the counter to 56, to 0 and to 100.
Note the events generated:
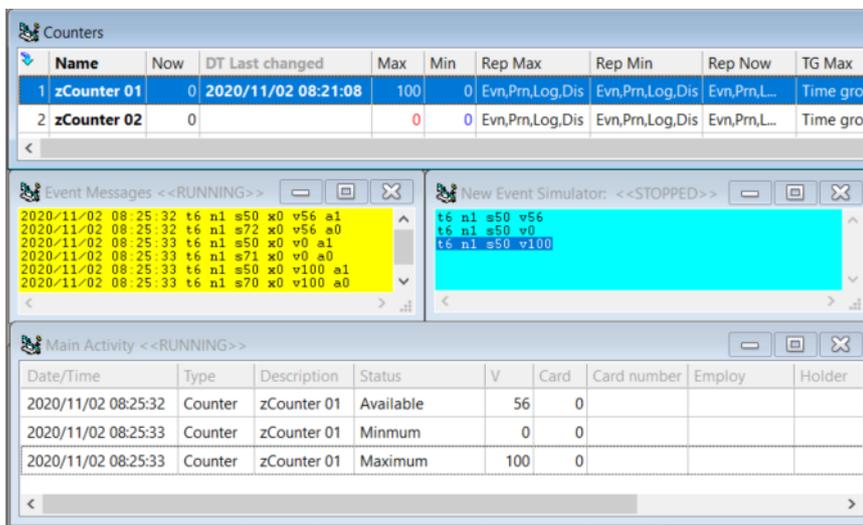
Where **access** must be granted **according to counts**, all functions are done via the PC, using **EVENTS**:

1. Tokens are not enabled in the reader (reader set as **DB location PC**).
2. The PC receives from the Comms Interface, the event READER, USER OUT-AREA and automatically does a check to see if User is enabled, that the User is not out-of-area by checking if the Users area group has access to the readers "TO AREA" and that the User is not already in the area (if the User is not pass back and the reader is an APB reader). The event READER/User ENABLED or READER/User DISABLED or READER/User OUT-AREA is issued.
3. An event to open the door must be set to trigger on READER/User ENABLED (with VALUE=trigger group optional) added with COUNTER/IN AVAILABLE or IN MINIMUM.
4. An event to generate READER/User ENTERED must be set to trigger on the door open command, or have the same two triggers as required by the door open. The User ENTERED event must transfer the user number by setting **Xref** equal to the negative of the READER/User ENABLED trigger.

For example, open front door if User is enabled, and count_1 available for trigger group 7, update User location and APB:

	Type	**system**	**status**	**value**	**xref**
Event:	Open-door: algorithm 5*(1+6)				
	Type output	**system** front_door	**status** level_change	**value** 1	**xref** -5
ref 1	**Type** counter	**system** count_1	**status** in available	**value** 0	**xref** 0
ref 5	**Type** reader	**system** reader_in	**status** enabled	**value** 7	**xref** 0
ref 6	**Type** counter	**system** count_1	**status** in minimum	**value** 0	**xref** 0
Event:	Update: algorithm 2				
	Type reader	**system** reader_in	**status** entered	**value** 0	**xref** -2
ref 2	**Type** output	**system** front_door	**status** level change	**value** 1	**xref** 0

Event Open_door triggers Event Update, and the User number is transferred from trigger 5 to trigger 2 to event Update. If exit, the count values in available and in maximum need not be checked (i.e. exit regardless of the count).

ALTERNATIVELY

	Type	**system**	**status**	**value**	**xref**
Event:	Entry: algorithm 5*(1+6)				
	Type output	**system** front_door	**status** level_change	**value** 1	**xref** 0
	Type reader	**system** reader_in	**status** entered	**value** 0	**xref** -5
ref 1	**Type** counter	**system** count_1	**status** in available	**value** 0	**xref** 0
ref 5	**Type** reader	**system** reader_in	**status** enabled	**value** 6	**xref** 0
ref 6	**Type** counter	**system** count_1	**status** in minimum	**value** 0	**xref** 0

	Type	**system**	**status**	**value**	**xref**
Counter:	Count_1 is typically set as follows: **min** 0, present 5, maximum 10				
	Type reader	**system** reader_in	**status** entered	**value** 0	**xref** 0**+**1
	Type reader	**system** reader_out	**status** entered	**value** 0	**xref** 0**-**1

Quick Setup Guide for Counter Setup

4   EVENT-EVENT

Select the **event** to be viewed or edited with the down key on the list box of the **event name**.
The name can be edited with the list box closed.

The **PC** and **Program** that has to receive and process the event generated are selected from the lists. Selection of '**Resolve**' sets that the PC generating the event must process the new event.

The **algorithm** is set with the event **trigger** reference numbers, indicating "AND's" and "OR's", e.g.
1+3   trigger 1 or 3 can trigger the event.
2*4   trigger 2 and 4 must be valid for the event to be generated.
1+2+(5*6)   1 or 2 or 5 and 6.

The status of a **time group**, i.e. time group now active is true (or 1), or not now active is false (0) can be used in an algorithm and is defined as a T followed by the group number, e,g.
2*4*T10

The event generates when the algorithms of triggers are valid and are set in the row above the triggers.
This is the event message, which is posted on the notice board when the triggers match (and algorithm passes). **Value** and **Xref** can be set to values for further matching on other events or counters, or if set with a preceding **~** (tilde) character, the value equal to the trigger reference value, e.g
 ~5 for trigger ref 5
the value of that triggers value or xref is set for the event value or xref.

<p style="text-align:center">NOTE THAT VERSION BEFORE 1.55 USED – (minus), now ~ (tilde).</p>

Negative values are sent as negative values (negative values have special meaning in certain events
    e.g. in timer events.

The PC and application (program) to which the event must be sent are selected from the lists as specific or all. The PC selection of Resolve sets the current program.

When generating event 19 –**Set User parameters** (type system), the following field of the event generated are:
Value   **Vtg** of non-zero contains a trigger group setting – all Users that match the non-zero trigger group are changed.
Z1   sets the User's **area group**. 0 leaves the group unchanged.
Z2   sets the User's **time group**. 0 leaves the group unchanged.
Z3   sets the User **status** (0=disable, 1=enable, 2=capture). Values above 2 leaves the status unchanged.
The changed Users are automatically sent to the CntrPs and the changes are logged in the audit file.

When using a **virtual User** (a User that as virtual setting of yes) in a trigger (e.g. ca User rd 100) results in the User that generated the event (e.g. User 5) to be compared with the virtual User. If all non-empty fields of the virtual User match the User (i.e. all non-empty fields in User 100 match the fields in User 5), the trigger is true.
Typical example – any User of department 123 – set a virtual User (e.g. User 100) with department 123 and all other fields of User 100 as empty. See **virtual Users**.

As example of an event generated: open front door if a User at reader-in with trigger group 50 is enabled and count_1 is available; update the User location and APB:

Event:	Open_door: algorithm 1*5				
	Type output	**system** front_door	**status** level_change	**value** 1	**xref** ~5
ref 1	**Type** counter	**system** count_1	**status** available	**value** 0	**xref** 0
ref 5	**Type** reader	**system** reader_in	**status** enabled	**value** 50	**xref** 0
Event:	Update: algorithm 2				
	Type reader	**system** reader_in	**status** entered	**value** 0	**xref** ~2
ref 2	**Type** output	**system** front_door	**status** level change	**value** 1	**xref** 0

Event **Open_door** triggers event **Update** and the user number is transferred from trigger 5.

When requiring a specific PC to perform the event, the algorithm required * with a trigger t18 n? s99 which is type PC (18), the PC and the status: check PC.

5 EXE EVENT

On pre-set **events** (or combination of events), programs can be set to run. For example, when an alarm triggers, start the Write text editor with the document "OCCURANCE.DOC", where the operator has to enter the actions taken in response to the alarm, of start a paging program to call a service technician when certain temperature alarms are detected.

To view or edit an EXE event set-up, click on the **EXE name** list box and select the required EXE event.
The description of the EXE event is by clicking on the description (with the list box closed) and editing the name. For each EXE event, the program to be executed (**File name**) is entered with full path, extension and parameters (if required).

The command line can include the trigger information by using **~t, ~n, ~s, ~x, ~v, ~a or ~z1, ~z2**.
The active trigger data is substituted in the string. For example:
C:\WINDOWS\WRITE.EXE C:\SOFTWIN\REPORT\OCCURANCE.DOC.
C:\SOFTWIN\SOFTREP.EXE 14 NP AC p1: ~x.   sends the parameters 14 NP AC p1: xref

The PC on which the program is to run (**Run PC**) is selected from the list of PCs.

As for event-event, **algorithm** is set with event **trigger** reference numbers, indicating "AND's" and "OR's", e.g.
    1+3   trigger 1 or 3 can trigger the event.
    2*4   trigger 2 and 4 must be valid for the event to be generated.
    1+2+(5*6)   1 or 2 or 5 and 6

The status of a **time group**, i.e. time group now active is true (or 1), or not now active is false (0) can be used in an algorithm and is defined as a T followed by the group number, e,g.
    2*4*T10

Example 1: start a paging program to all a technician when a temperature alarm occurs:
    File: C:\page\pager.exe CLIVE temperature_alarm_computer_room
    algorithm: 1+5

    ref 1   **Type** input   **system** computer_1   **status** level_change   **value** 2   **xref** 0
    ref 5   **Type** input   **system** computer_2   **status** level_change   **value** 2   **xref** 0

Example 2: With the default shipped Softwin3, a timed event (see above) generates a backup event, that triggers the exe event as below.

See Events on multi-PC if events are required on other PCs to start exe events.

6   TIMED EVENTS

Events can be set to be automatically generated at certain time(s), for example do APB reset at midnight or clear totals on month end. The events are set via the TIMED EVENTS menu.

Description. The event is given a descriptive name by clicking on the name and overwriting (the drop down box must be closed before the data can be edited. By selecting the down key of the drop down box, the timed event to be displayed/edited is selected by typing in the name (with the drop down box open) or scrolling to the timed event required.

Next. The time and date when the event must be generated next time. This time is used for the start and is used to synchronize the date-time of when to do (e.g. if set to 08:00, it will always be done at 08:00).
The data is in the format yyyy-mm-dd hh:mm (year-month-date space hour: minute).
To set this, the field must be editable (right click on any column header, select properties and change eye icon to a pencil). NOTE after edit, click on any parameter in the same line.

Repeat. The event can be repeated after the start. The period is in the same format as start. To repeat once a day set the repeat period to 0000-00-01 00:00. To repeat every month on the last day of the month, set the start date to 31.

End. The last time and date the event is generated automatically. A year of 0000 sets no end.

Last. The time and date of the last executed event. Note that this is when it was done and may not be synchronized at the time indicated in next (e.g. when a skipped event was done).

Skipped. Events that should have been executed while the program was not running can be set to be **all missed done**, **only last done** or **none done**.

Type, **system**, **Status**, **Value**, **Xref**, **Alarm.** Define the event that must be generated. See **Events** for more details.

The **PC** that performs the event is selected from the list of PCs.

Example 1: Backup
In the default ship, an event to do backup is generated once a day.

T=System,   SystemNr=100   Status=Backup   Xref=100   Value=100

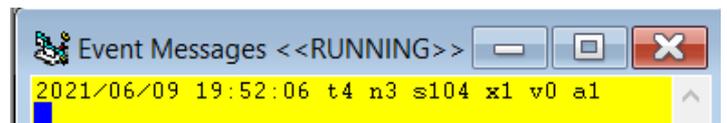| Ref	Description	Last Done	Next	PC	End	Repeat	Skipped	Type	Sys	Val...	STAT	Xref	Alarm
1	Backup	2021/06/09 16:45:12	2021/06/10 01:00:00	localhost		0000-00-01 00:00	Not do any ...	System	100	100	Backup	100	Unknown

An Exe Event (see below) is triggered with this event to start backup.bat.

Example 2: Reset
At 02:00 and 14:00, reset controller 3.

To see the event, open the Event Messages window in the Tools Menu. If not selectable, enable in the Tools / Test options.
Right click on the controller and select reset.

Event Messages <<RUNNING>>
2021/06/09 19:52:06 t4 n3 s104 x1 v0 a1

Note the event:
T4=Type Controller, **N3**=controller 3, **S104**=status Controllers Reset

Create this timed event:

Ref	Description	Last Done	Next	PC	End	Repeat	Skipped	Type	Sys	Val...	STAT	
2	Reset Barrier	2021/06/09 19:48:20	2021/06/10 02:00:00	localhost		0000-00-00 12:00	Not do any ...	Controller	3	0	Operator controll...	

7 TIMER

The system provides for numerous system timers (up to 65000, set in the Timer table in Access.mdb) that generate set events on time-out. On events, timers are set to start (loads set, pre-set or current values), stop or set current values. Timers can be set or pre-set to cycle.

Typical examples:
    If operator does not accept an alarm within 60 seconds, sound a siren. If not accepted within 2 minutes, send an SMS.
    While a door is open, give an audible alarm every minute, and send an EMAIL if door remains open for longer than 10 minutes.
    After hours – if no motion is detected for more than 10 minutes, enable the alarm system.

These timers are set-up via the **TIMER SET-UP** list editor with the data below.
Timing out and events sections describe how the system automatically changes certain data.

The **checking period** (how often) timers are checked are set in the **PC set-up**, setting which PC does the checking (**Timer Processing**).

A delay can be set after which the checking is started after the programs starts (allowing for events to be received that may stop / reload timers (**general set-up**).

7.1 TIMER SET-UP (SETUP EDITOR)

Reference.   Timer (reference) number.
Name.   Descriptive name given to the timer to identify it.
Status.   Current status of the timer (automatically changed by the system):
         0=stopped   1=running
         2=cycling   3=timed-out.
Status Date Time.   Last time the timer status was changed (automatically updated).
Event trigger.   Event that caused the timer start event (automatically saved by the system in event-event, cleared if started any other way – e.g. timed event, operator, etc.).

Timer reload.   A preset reload value in seconds.
Time remain.   Current value of the timer in seconds.
     The value can be set manually or by the system.
     The display is only updated when entering the menu, when the timer starts, stops or when timing-out - if the list is set to live, by selecting F5 (refresh).
Time-out DT.   If status is running or cycling, contains when the time-out will occur if not stopped. Automatically updated when timer is starts running or cycling or when time remain is edited.
Time-out result.   If not an empty string, the event that is automatically generated when time-out occurs. Event parameters are fixed or can be loaded from the Event trigger, or contain the reload or the stated value by entering a ~ (insert) character as follows (case insensitive):
         ~t   Trigger type.   ~s   Trigger status.
         ~n   Trigger system number.   ~v   Trigger value.
         ~x   Trigger xref.   ~z1...10   Trigger z.
         ~R   Timer reload value. ~C   Timer remain (current value).

Cycle reload.   Number of pre-set time-out cycles. 0 is not cycle, -1 is endless cycle.
Cycle remain.   Number of remaining cycles on time-out. 0 is not cycle, -1 is endless cycle. If positive value, automatically decremented by the system when recycle starts.
Cycles done.   Number of cycles done since started. Automatically incremented when timed-out.

Cycle result.   If not an empty string, the event automatically generated when cycling occurs, parameters as for time-out result event.

Timing out automatically occurs when timer status is not stopped or timed out (thus running or cycling) and the real time is after the time-out DT. Note that on starting of the client program, timer events are checked for the first time after a pre-set number of seconds (general set-up) after starting (allowing all events, timed events to be completed first). The PC and period of time-out checking is set.

On timing, out, the following is done (in order):

Cycles done is incremented.
Time remain=0.
If cycles remain > 0   Decrement.
If cycles remain <> 0   Time remain=timer reload.

If time remain <> 0:   Set timer status=cycling.
    Set time-out DT.
    Generate Cycling event.
    Generate Cycle result event (if rep is event or event-tg active).
        or
If time remain = 0: Set timer status=timed-out.
    Generate timed-out event.
    Generate Timed-out result event (if rep is event or event-tg active).

Timer events: In any of the values below negatives -1 means forever.
Parameter v, x, z1 and z2 set what must be done to the timer
Parameter are checked for legal values and changed if wrong, are indicated in red.

Control events:

80 **Timer se**t.   The system does the following (in order):

Load time reload:	z_1-2	unchanged, with z_1.z_1 < -2 set to 0.	
Load cycle value:	z_2-2	unchanged, with z_2.z_2 <-2 set to 0.	
Load time remain:	v-2	unchanged, with time reload (v-3), with v.	v < -3 set to 0.
Load cycle remain:	x-2	unchanged, with cycle value (x-3), with x.	x < -3 set to 0.

81 **Timer start**. Irrespective of the current status, the system does the following (in order):

(Event-event will have saved the triggering event to event trigger string).
Load time remain: v-2   unchanged   v <- 4, v set to -2
      v-3   with time reload value
      v-4   recalculate from time-out DT with v.
Load cycle remain: x-2   unchanged   x < -3 set to -2
x-3 with cycle value with x.
Clear cycles done.
    Set time-out DT (of when time-out will occur, real time plus time remain).
        DT of zero means forever (time remain negative).
        Set status DT with real time.
    If cycles remain=0, set status=running.
    If cycles remain<>0, set status=cycling.
    Generate started event (see below).

82 **Timer stop**. Irrespective of the current status, the system des the following (in order):

If time remain is not negative, update (seconds from now till time-out date-time).
Set status DT with real time.
Set status=stopped.
Generate Stopped event (see below).
Set time remain: v-2   unchanged   v < -3 set to -2
      v-3   with reload value with v.
Set cycle remain: x-2   unchanged   x < -3 set to -2.
      x-3   with cycle value with x.

Current Status events:

83 Timer in status.   Used as event status trigger (as level 55), being true when v equals timer status (see timer status above).

The following events are automatically generated by timers, with current values loaded:
v time remain   x cycles remain   q1 time preload   q2 cycle value   q3   cycles done.

Status changed events:

85 Timer Started.   86 Timer Stopped.   87 Timer Timed-out.   88 Timer Cycling. See timing out above.

Timer generated events are set to be logged, displayed, and printed and to trigger other events.
A corresponding time-group sets when the event is an alarm and when the timed report function is active.
See Event Reporting.

Control Rep, TG	Control events – set, start and stop.
Started Rep, TG	Started.
Cycling Rep, TG	Cycling.
Stopped Rep, TG.	Stopped.
Timed-out Rep, TG.	Timed-out.
Time-out result Rep, TG.	Time-out generated event.
	Event is only generated if rep is event or event-tg active (or tg 0).
	Alarm or not is set in event.
Cycle result Rep, TG.	Cycle generated event.
	Event is only generated if rep is event or event-tg is active (or tg 0).
	Alarm or not is set in event.

Quick Setup Guide for Timers

8 EVENTS ON MULTI-PC

In a multi-PC system, **specific PCs** can be set to generate new events (event-event), start timers or programs (exe events), increment counters or control timers.

Event triggers to run exe events can only be used on the PC that generated the trigger.

As example: PC1 links to controllers (Comms Interface set to PC1).
PC2 must print a slip (report 38)
EXE event on PC2 cannot trigger on the Reader event as it is generated by PC1.

Set an event-event to trigger on the reader event (generated by PC1) and generate a new event by PC2.
The new event can trigger an exe event on PC2.

As per the example, SCS_Client on PC2 (196.168.1.111) generates event System/1/Run exe/v123/x-from trigger.

This can be used to trigger an EXE-Event on PC2:

See SCS_sw3_Print.how for details on this example.