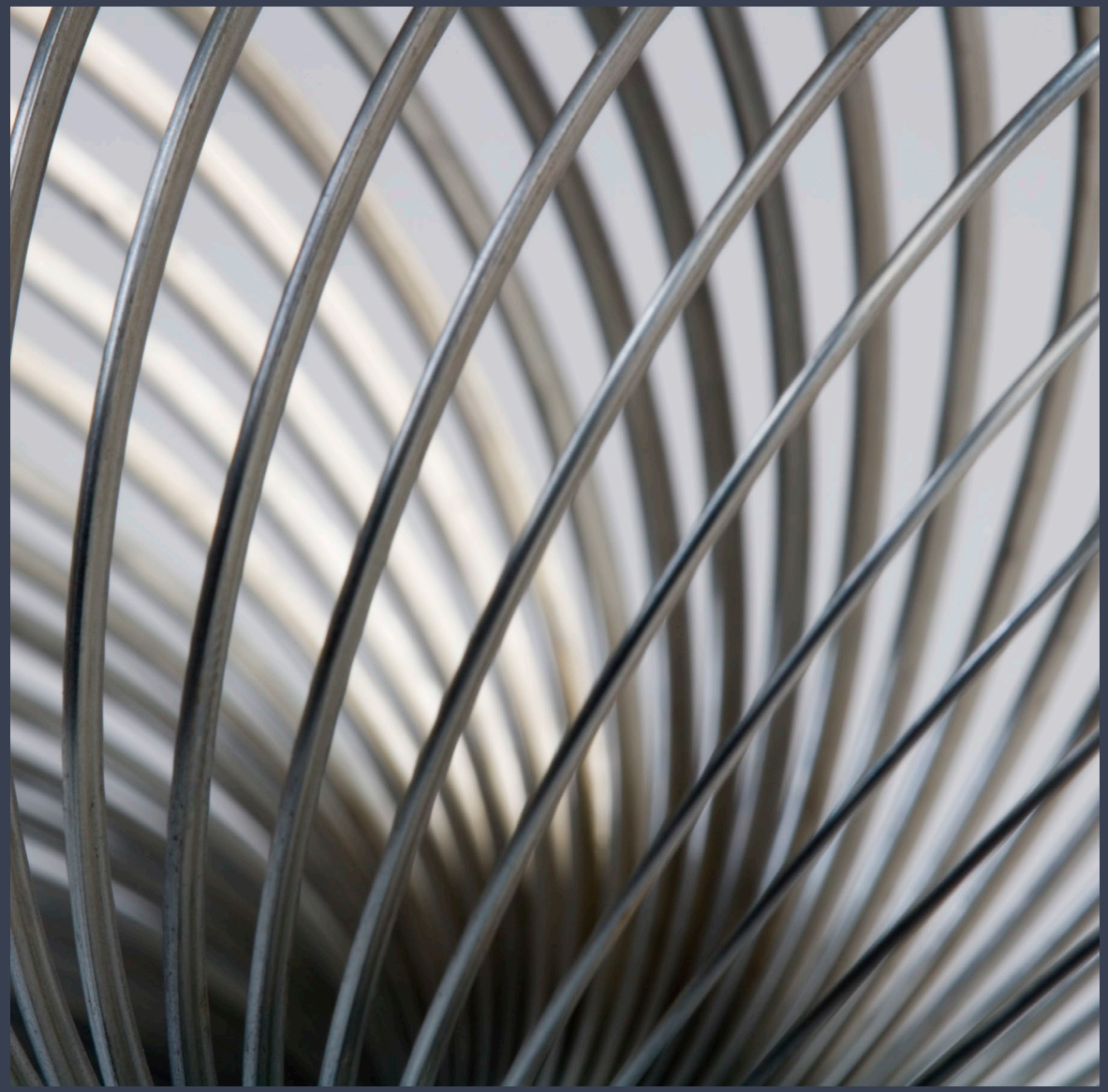
NUGM 2024

ECA BUILDING

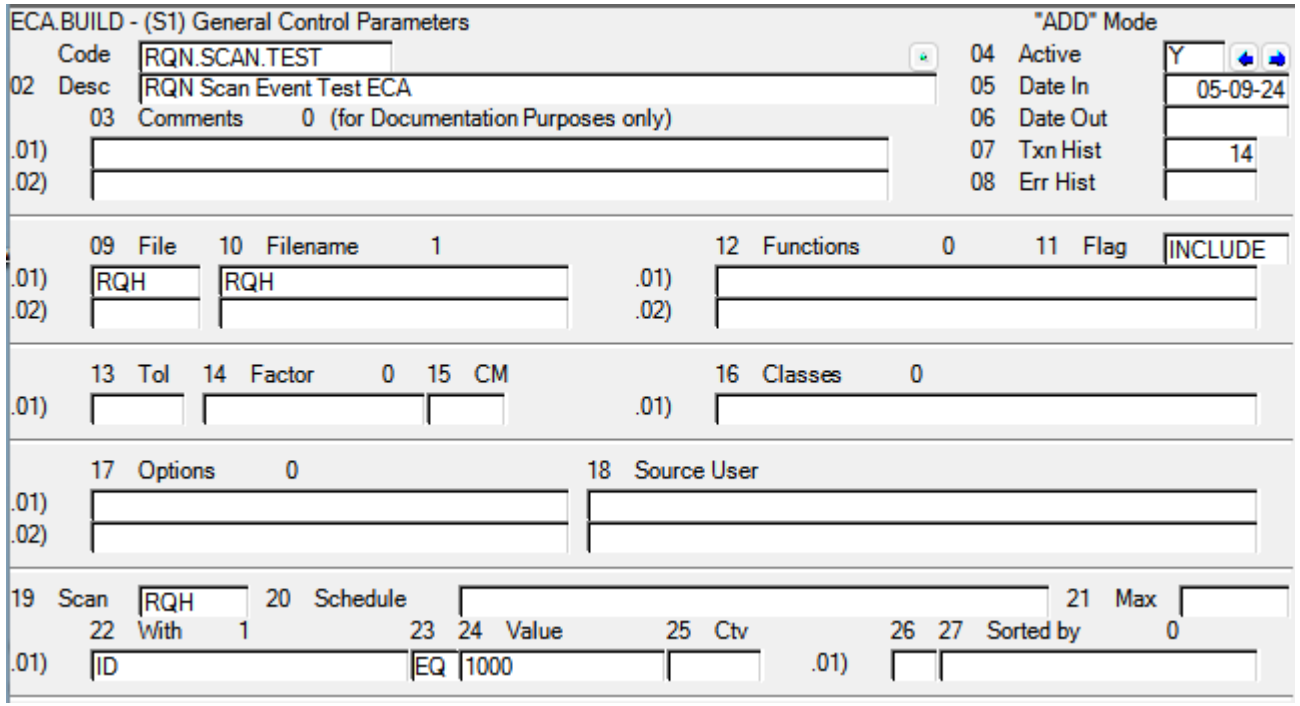


Marc Harbeson, NovoROI Systems LLC

AGENDA

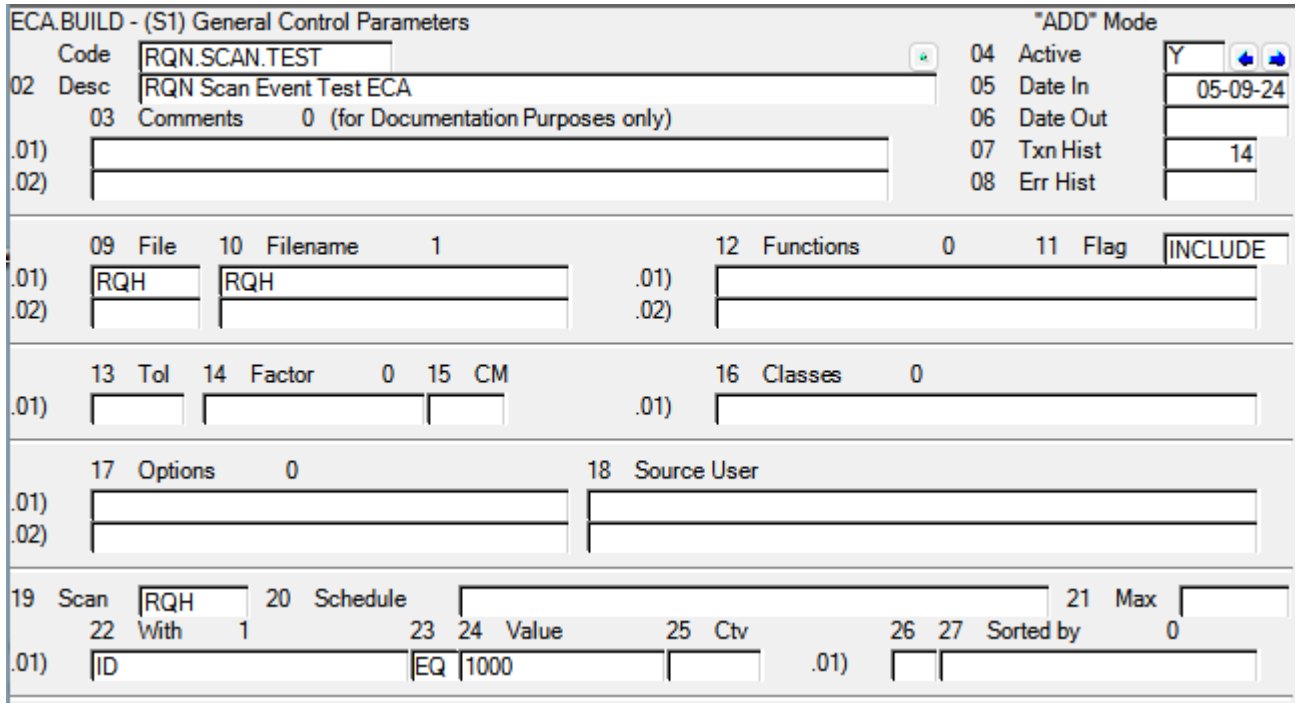
- Overview of the ECA.BUILD process screens
- Using HTML in the body of an ECA
- Using a subroutine to generate multiple detail for 1 triggered event (RQH and RQD in our example)
- Discuss different kinds of ECAs
- Discuss the Master Agent interface

ECA.BUILD SCREEN 1



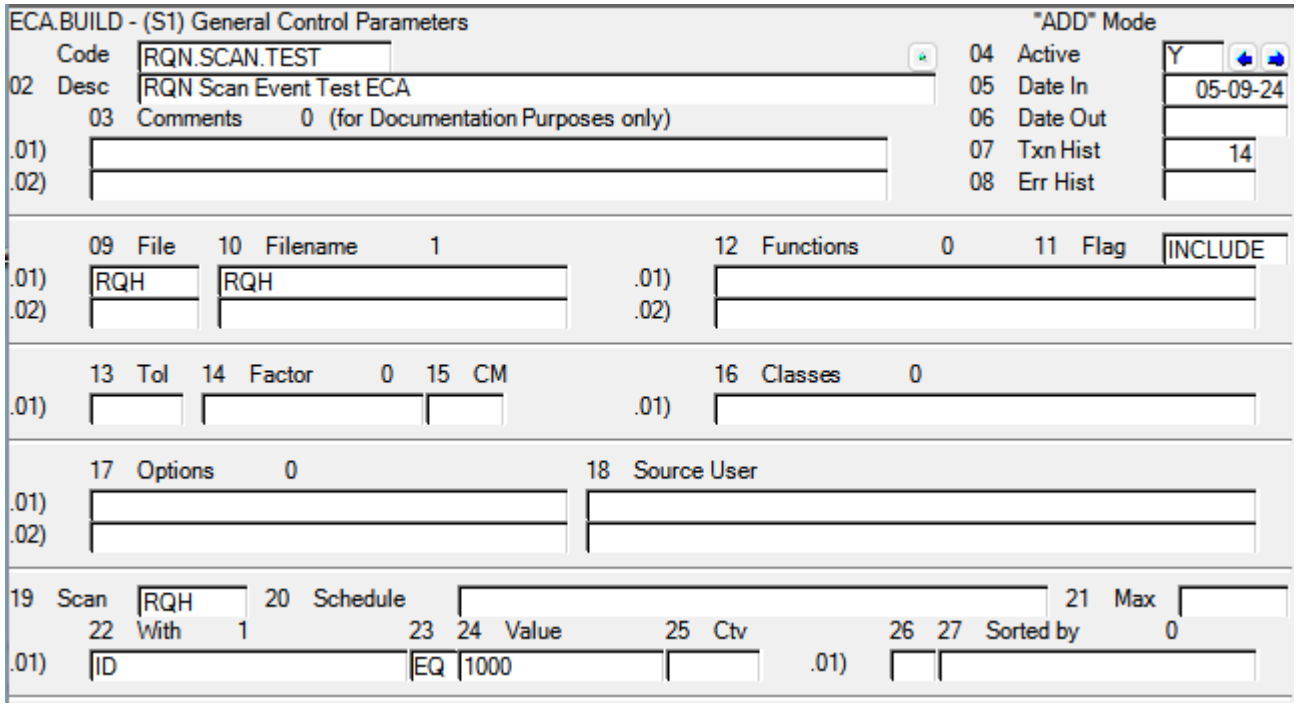
- In this example, we are building a RQN notification ECA
  - Since this is a demo we will use the SCAN type ECA so we can trigger it manually.
- 02 – Describe your ECA
- 03 – Internal comments – Document your ECA
- 04 – Active or Not
- 05 / 06 – Effect Dates In / Out
- 07 – How long to retain ECAT records
  - ECA.AGENT will purge them
- 08 – How long to retain ECAT records in PURGE and ERROR

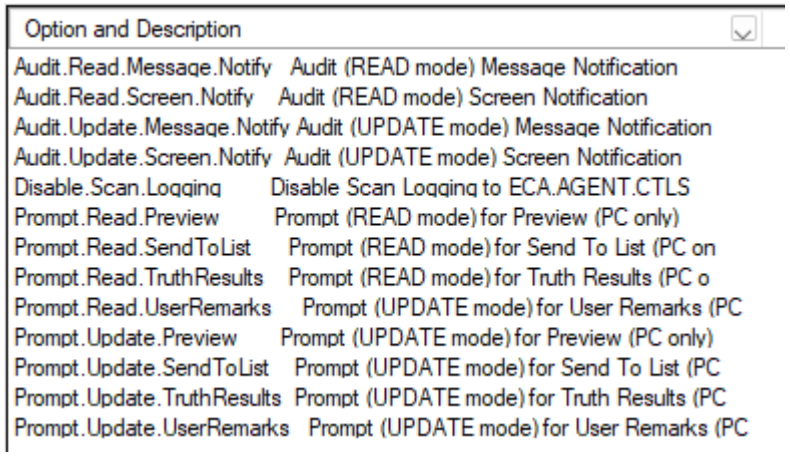
ECA.BUILD SCREEN 1



- 09 – Files that will be referenced in this ECA
  - Important that calling ECA.UPDATE also references these files in the event triggering ECA
- 10 – How you want to reference in ECA the file in 09
- 11/12 – You can include or exclude functions that are allowed to trigger this ECA
  - Blank is wildcard
- 13/14/15 – Set tolerance to enable this ECA
  - For example RQN changed by more than 10%
- 19/21/22/23/24/25/26/27 – Used with ECA Scan type to filter to only certain events
- 20 – How often will ECA.AGENT perform this scan
  - (blank = manual user scan)

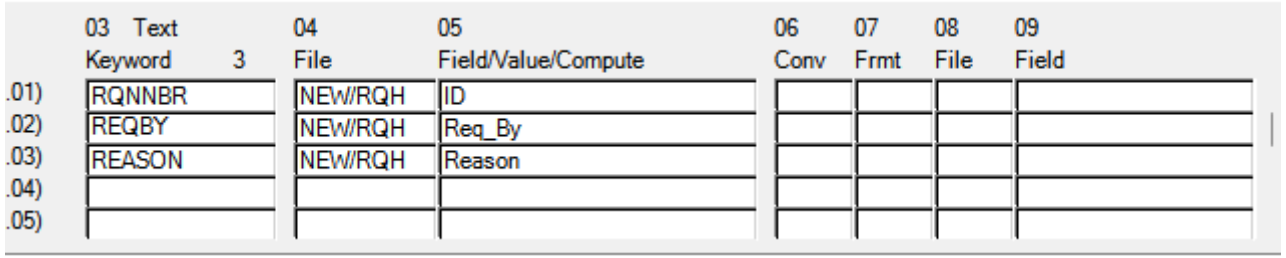
ECA.BUILD SCREEN 1



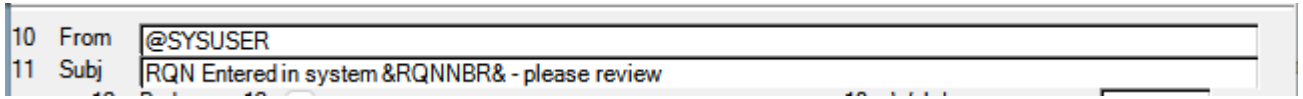


- 17 – Enable different debug trigger types for interactive user debug of the ECA as triggered
  - Use this when you are not getting the ECA triggered and want to see what M2K is evaluating the conditions with
- 18 – Filters the event to specific users
  - Hint – you want your user ID here

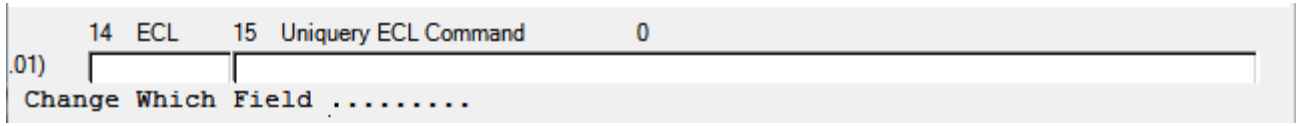
ECA.BUILD SCREEN 2



	03 Text Keyword 3	04 File	05 Field/Value/Compute	06 Conv	07 Frmt	08 File	09 Field
.01)	RQNNBR	NEW/RQH	ID				
.02)	REQBY	NEW/RQH	Req_By				
.03)	REASON	NEW/RQH	Reason				
.04)							
.05)							



10	From	@SYSUSER
11	Subj	RQN Entered in system &RQNNBR& - please review

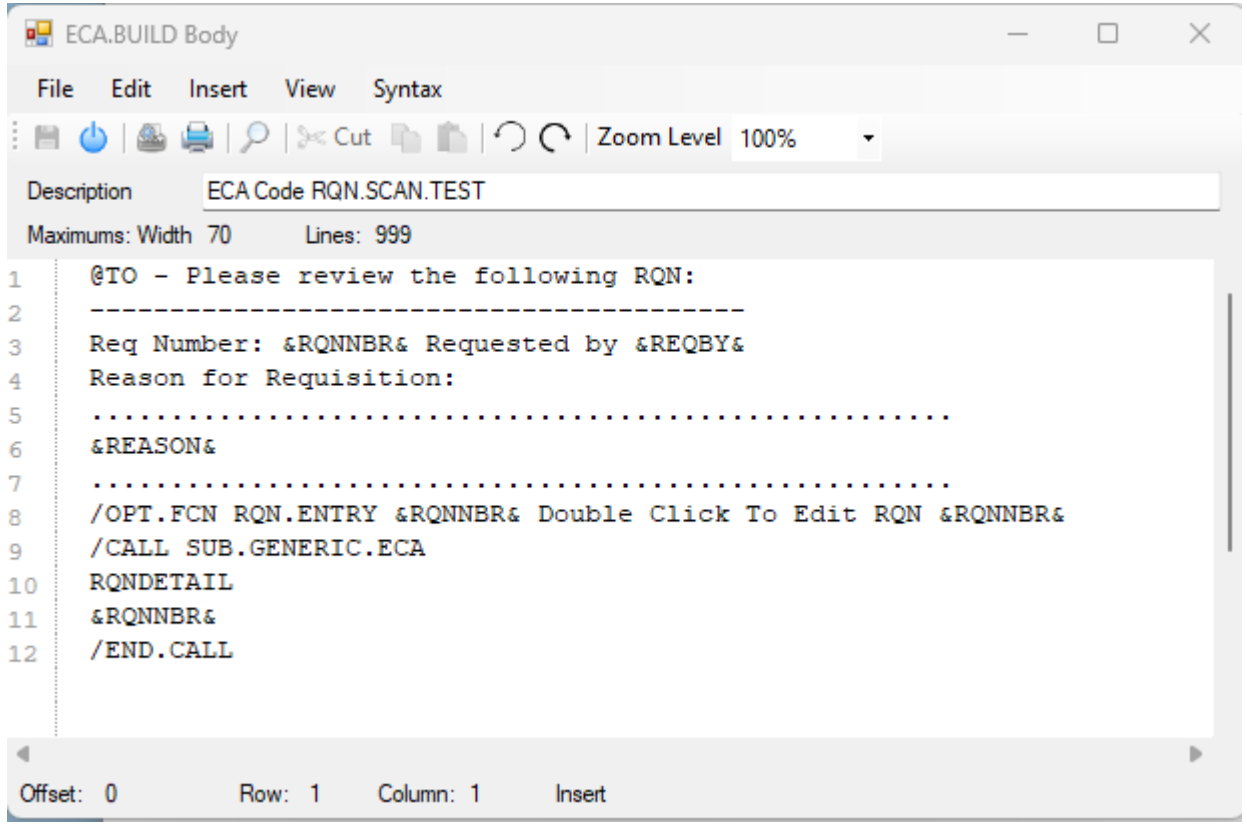


	14 ECL	15 Uniquery ECL Command	0
.01)			

Change Which Field .....

- ECA Keywords are used in message construction, condition evaluation and action selection as well
  - Keywords are building blocks
- When sending messages, this determines the from and subject
  - Keywords and System Variables can be used here
  - For a full list of system variables – see the prompt help on prompt 12
- This can be used to put a LIST statement in the body, or used to generate Contact IDs for notification on next ACTION screen

ECA.BUILD SCREEN 2

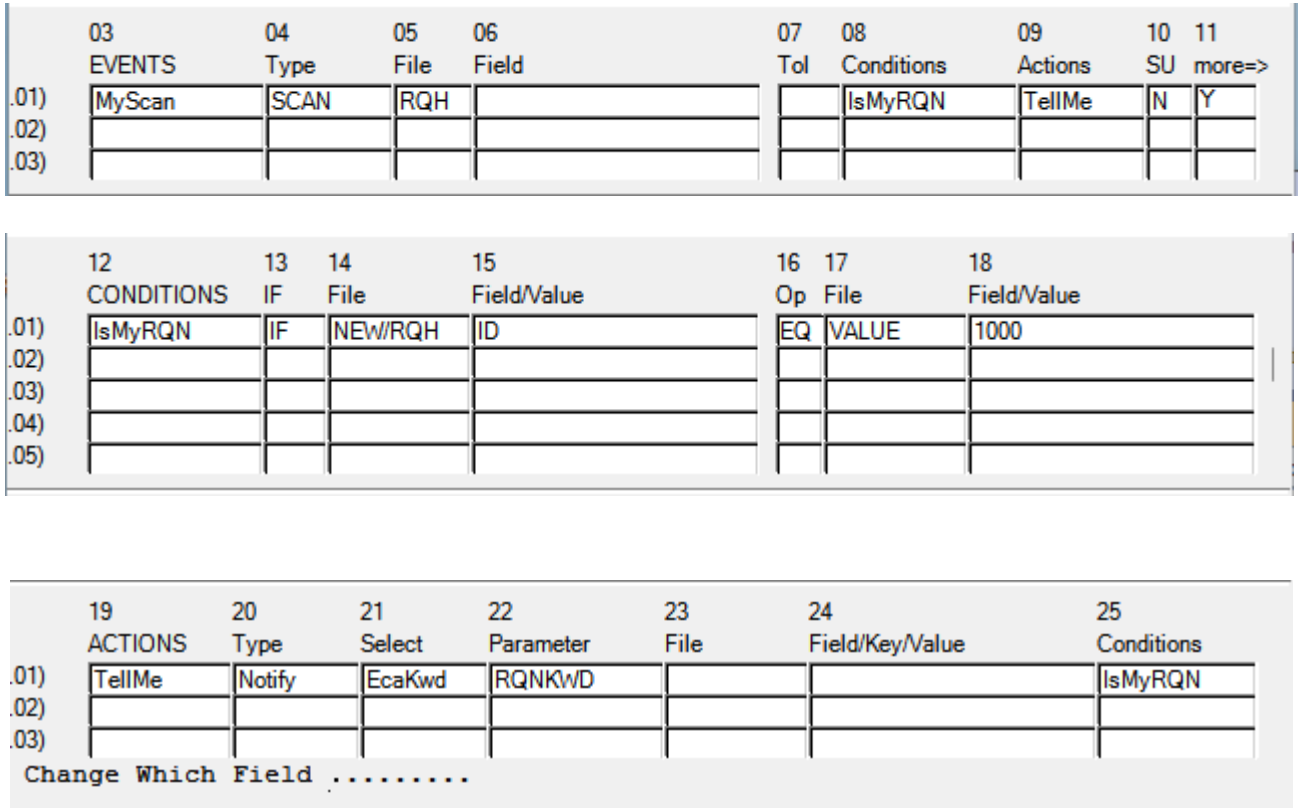


- The body can use Keywords
- The body can also use System Variables (See Doc)
- You can also attach functions (See Doc for multiple options)
- You can CALL a subroutine to construct more body
  - In our example HTML formatted RQD lines
- CALL is also used to engage Master Agent (see prompt doc)

ECA SUBROUTINE EXAMPLE

```
SUBROUTINE SUB.GENERIC.ECA(PROPS,ECA.INFO,RESULTS)*
COMMAND = TRIM(PROPS<1>)
RESULTS = ''
BEGIN CASE
   CASE COMMAND = 'RQNDETAIL'
      RQH.KEY = TRIM(PROPS<2>)
      RQH.REC = XLATE("RQH",RQH.KEY,-1,"X")
      VEN.ID  = RQH.REC<9>
      VEN.REC = XLATE("VEN",VEN.ID,-1,"X")
      VEN.NAME = VEN.ID : ' ' : VEN.REC<2,1>
      RESULTS<1,-1> = '<STYLE TYPE="text/css">'
      RESULTS<1,-1> = '{font-family: Arial; font-size: 10pt;}'
      RESULTS<1,-1> = '</STYLE>'
      RESULTS<1,-1> = '<TABLE BORDER="1" font size=1>'
      RESULTS<1,-1> = '<CAPTION>RQN Header Info</CAPTION>'
      RESULTS<1,-1> = '<TR><TD><B>Vendor Name</B></TD><TD>':VEN.NAME:'</TD></TR>'
      RESULTS<1,-1> = '<TR><TD><B>Rqn Total</B></TD><TD>':OCONV(RQH.REC<29>,"MD2$,"):'</TD></TR>'
      RESULTS<1,-1> = '<TR><TD><B>Special Instructions</B></TD><TD>' : RQH.REC<22>  :'</TD></TR>'
      RESULTS<1,-1> = '</TABLE>'
      *
      RESULTS<1,-1> = '<TABLE BORDER="1" font size=1>'
      RESULTS<1,-1> = '<CAPTION>RQN Details</CAPTION>'
      RESULTS<1,-1> = '<TR><TD><B>Line</B></TD>'
      RESULTS<1,-1> = '<TD><B>Item</B></TD>'
      RESULTS<1,-1> = '<TD><B>Desc</B></TD>'
      RESULTS<1,-1> = '<TD><B>Qty</B></TD>'
      RESULTS<1,-1> = '<TD><B>UM</B></TD>'
      RESULTS<1,-1> = '<TD><B>Unit Price</B></TD>'
      RESULTS<1,-1> = '<TD><B>Extd Price</B></TD>'
      RESULTS<1,-1> = '<TD><B>Disp Dest</B></TD></TR>'
      *
      RQD.LINES = RQH.REC<27>
      FOR L = 1 TO DCOUNT(RQD.LINES,@VM)
         RQD.KEY = RQH.KEY : "*" : RQD.LINES<1,L>
         RQD.REC = XLATE("RQD",RQD.KEY,-1,"X")
         QTY = RQD.REC<6>
         PRICE = RQD.REC<7>
         *#* CALC EXT.PRICE = QTY * PRICE :QTY=0,PRICE=4,EXT.PRICE=4<4> ;*#* Calc Source Follows (03-22-15)
         EXT.PRICE=(INT(((QTY/10)*PRICE)*10))
         *#*
         IF RQD.REC = '' THEN CONTINUE
         RESULTS<1,-1> = '<TR><TD>' : RQD.LINES<1,L> : '</TD>'
         RESULTS<1,-1> = '<TD>' :  RQD.REC<3> : '</TD>'
         RESULTS<1,-1> = '<TD>' :  RQD.REC<4> : '</TD>'
         RESULTS<1,-1> = '<TD>' :  QTY : '</TD>'
         RESULTS<1,-1> = '<TD>' :  RQD.REC<9> : '</TD>'
         RESULTS<1,-1> = '<TD>' :  OCONV(PRICE,"MD4,$") : '</TD>'
         RESULTS<1,-1> = '<TD>' :  OCONV(EXT.PRICE,"MD4,$") : '</TD>'
         RESULTS<1,-1> = '<TD>' :  RQD.REC<54> : ' ' : RQD.REC<55> : '</TD></TR>'
      NEXT L
      RESULTS<1,-1> = '</TABLE>'
END CASE
RETURN
```

ECA.BUILD SCREEN 3



	03 EVENTS	04 Type	05 File	06 Field	07 Tol	08 Conditions	09 Actions	10 SU	11 more=>
.01)	MyScan	SCAN	RQH			IsMyRQN	TellMe	N	Y
.02)									
.03)									

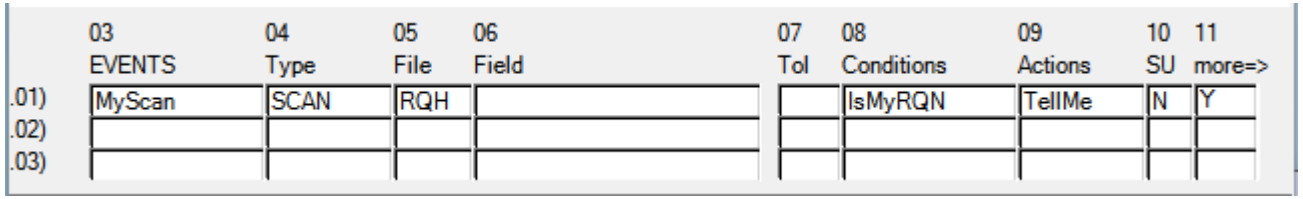
	12 CONDITIONS	13 IF	14 File	15 Field/Value	16 Op	17 File	18 Field/Value
.01)	IsMyRQN	IF	NEW/RQH	ID	EQ	VALUE	1000
.02)							
.03)							
.04)							
.05)							

	19 ACTIONS	20 Type	21 Select	22 Parameter	23 File	24 Field/Key/Value	25 Conditions
.01)	TellMe	Notify	EcaKwd	RQNKWD			IsMyRQN
.02)							
.03)							

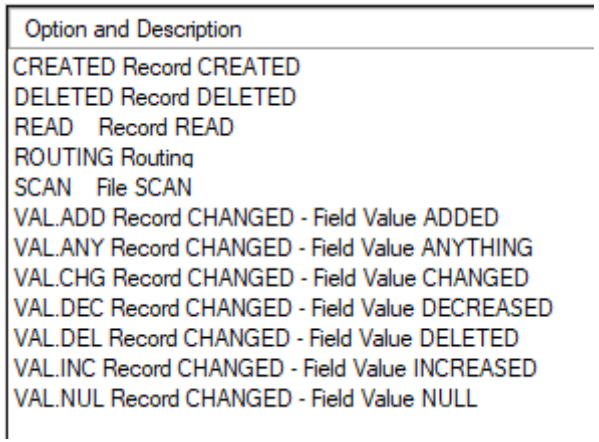
Change Which Field .....

- Top section defines the event which will trigger the ECA (The E)
- The middle section is where you define the condition (The C)
  - Conditions can be multiple to multiple in both Events and Actions
  - And / Or logic is also available
- The bottom section defines the Action (The A)
  - There are multiple ways to do actions
  - Actions can be multiple to multiple as well
- To make debugging easier, remember the KISS method: (Keep It Simple Stupid)
  - Don’t do multiple things in one ECA

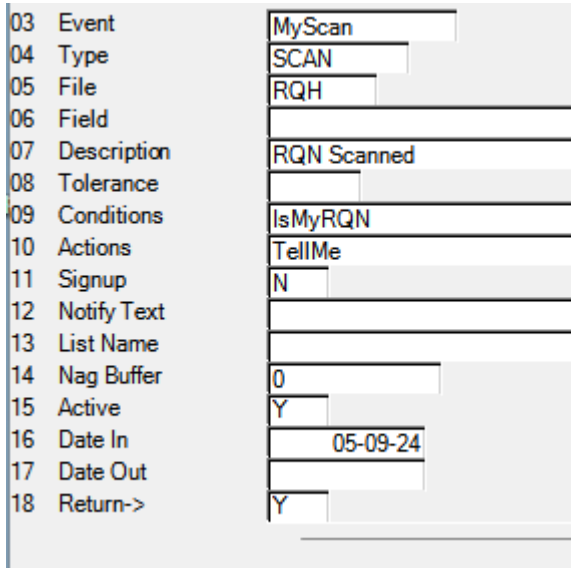
ECA.BUILD SCREEN 3



	03 EVENTS	04 Type	05 File	06 Field	07 Tol	08 Conditions	09 Actions	10 SU	11 more=>
.01)	MyScan	SCAN	RQH			IsMyRQN	TellMe	N	Y
.02)									
.03)									



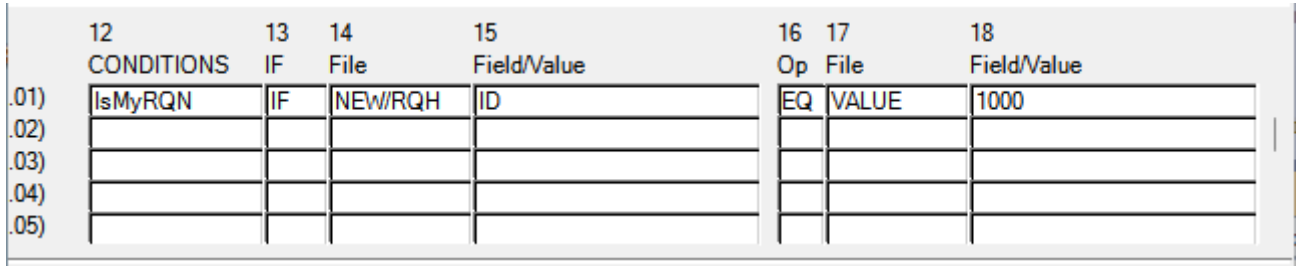
Option and Description
CREATED Record CREATED
DELETED Record DELETED
READ Record READ
ROUTING Routing
SCAN File SCAN
VAL.ADD Record CHANGED - Field Value ADDED
VAL.ANY Record CHANGED - Field Value ANYTHING
VAL.CHG Record CHANGED - Field Value CHANGED
VAL.DEC Record CHANGED - Field Value DECREASED
VAL.DEL Record CHANGED - Field Value DELETED
VAL.INC Record CHANGED - Field Value INCREASED
VAL.NUL Record CHANGED - Field Value NULL



03	Event	MyScan
04	Type	SCAN
05	File	RQH
06	Field	
07	Description	RQN Scanned
08	Tolerance	
09	Conditions	IsMyRQN
10	Actions	TellMe
11	Signup	N
12	Notify Text	
13	List Name	
14	Nag Buffer	0
15	Active	Y
16	Date In	05-09-24
17	Date Out	
18	Return->	Y

- Event Types – These are the kinds of Events you can capture
  - Depending on how this is answered depends on how prompts 5-6 are answered
  - Prompt 7 references the tolerance defined on screen 1
  - Prompt 8 / 9 are a bit of chicken and egg
    - First time through leave blank
- A note about the Nag Buffer
  - Use this when your transaction may get called multiple times within several seconds
  - For example, SOH gets written multiple times when saving a Sales Order
  - Think – once per SOD, and other calls as well

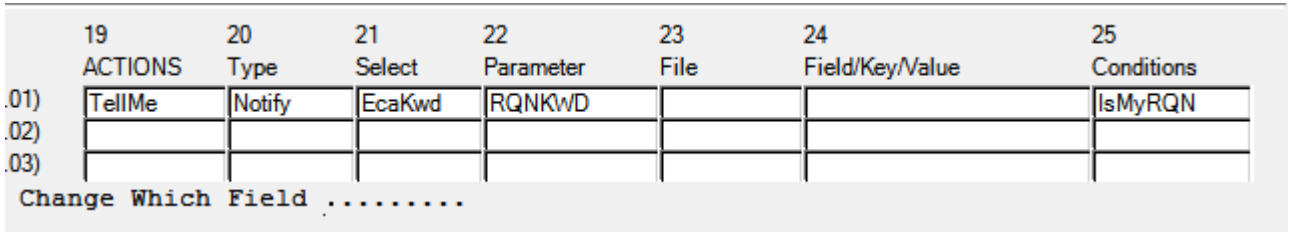
ECA.BUILD SCREEN 3



	12 CONDITIONS	13 IF	14 File	15 Field/Value	16 Op	17 File	18 Field/Value
.01)	IsMyRQN	IF	NEW/RQH	ID	EQ	VALUE	1000
.02)							
.03)							
.04)							
.05)							

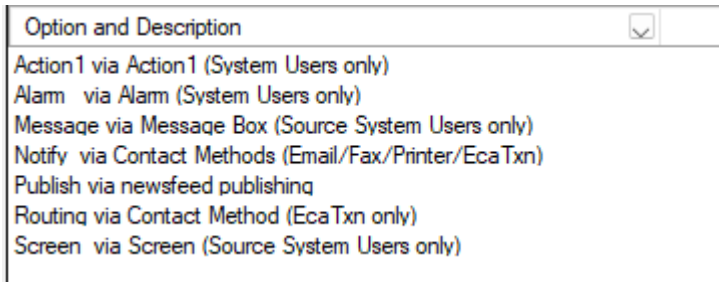
- A single condition can be on multiple lines
  - AND / OR logic applies using Prompt 13 on additional lines
- Multiple conditions (with different IDs in Prompt 12) can also be defined
- Old / New values can be compared to VALUE (Static coded value), File References (Old or New values), SYS.CTL values, etc.
- See Prompt Doc – again ECA prompt documentation is really good

ECA.BUILD SCREEN 3

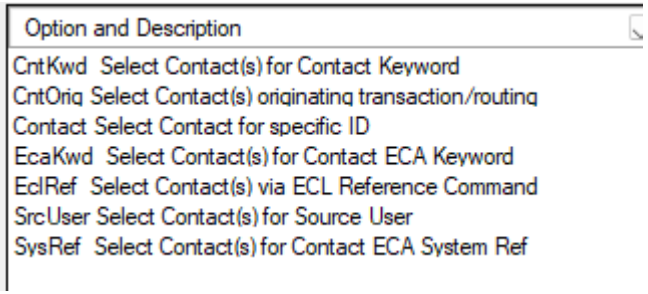


	19 ACTIONS	20 Type	21 Select	22 Parameter	23 File	24 Field/Key/Value	25 Conditions
.01)	TellMe	Notify	EcaKwd	RQNKWD			IsMyRQN
.02)							
.03)							

Change Which Field .....



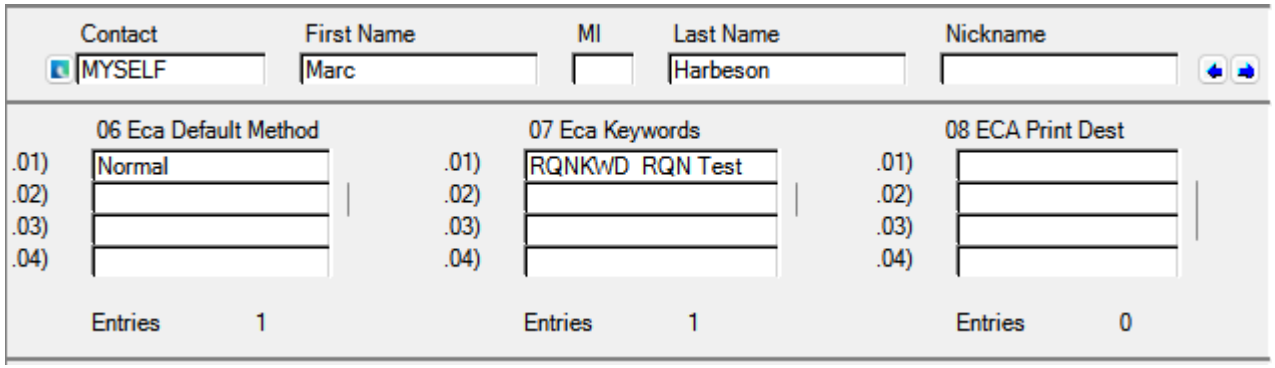
Option and Description
Action1 via Action1 (System Users only)
Alarm via Alarm (System Users only)
Message via Message Box (Source System Users only)
Notify via Contact Methods (Email/Fax/Printer/EcaTxn)
Publish via newsfeed publishing
Routing via Contact Method (EcaTxn only)
Screen via Screen (Source System Users only)



Option and Description
CntKwd Select Contact(s) for Contact Keyword
CntOrig Select Contact(s) originating transaction/routing
Contact Select Contact for specific ID
EcaKwd Select Contact(s) for Contact ECA Keyword
EclRef Select Contact(s) via ECL Reference Command
SrcUser Select Contact(s) for Source User
SysRef Select Contact(s) for Contact ECA System Ref

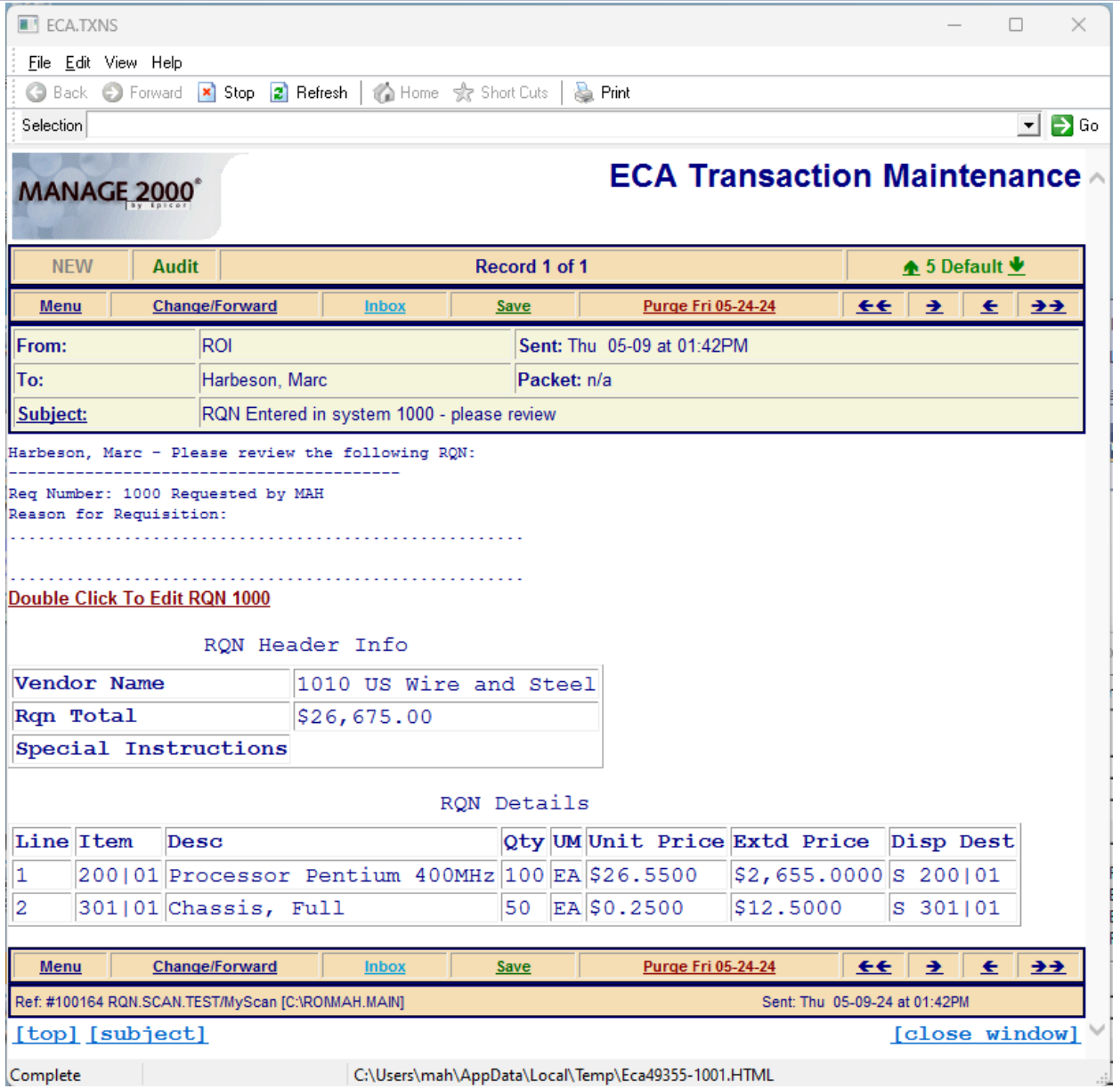
- Same here – Multiple actions can be defined
- Multiple outputs from same action are also allowed by using the same Action ID
- Types determine where the action goes
  - Screen Msg, Notification, News Feed Routing, etc.
- Selection defines how a destination is selected (User / Contact) via direct reference (Contact ID's or User ID's) or indirect reference such as Keywords that select multiple Contacts

CONTACTS ECA KEYWORD EXAMPLE



- By using Keywords instead of Contact IDs, as users are added and removed from the system, the ECA requires no modifications to keep up with the ever changing list of contacts in the system

ECA OUTPUT FROM SAMPLE



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ECA OUTPUT AS MASTER AGENT INPUT

ECA Subroutine: WRITE.ECA.MA.REQUEST(Properties, EcaInfoResults, Results)

This subroutine was specifically designed to be used with the /CALL command. It will generate a record for the MA_JOB_CTL file so ECA triggered information can be exported to the Master Agent subsystem to load a queue of choice including swap variables. Optionally, selected label(s) within a queue can be loaded with the default being all labels.

All properties must be carefully entered in ECA.BUILD since no validations are done when ending out. All validations are done in Master Agent at runtime and any errors are reported via email to Master Agent Error Administrators (configured in MA.CONSTANTS). You should set yourself up accordingly.

```
/CALL WRITE.ECA.MA.REQUEST
Queue=queueid
Label=labelid
{taskuser}=@SYSUSER
{custnbr}=&custnbr&
{sortopt}=B
/END.CALL
```

The property 'Queue=queueid' is required and must occur as the first property. Only one queue can be declared for each call, but many individual calls can be scripted. The reference 'queueid' must be a valid Master Agent Queue (MA.QUEUES) with a Queue Type of 'E' (ECA). This queue is a template and all outstanding job requests pointing at it will be honored.

The property 'Label=labelid' is optional and can be located anywhere after the first property. The reference 'labelid' must be a valid Master Agent Queue Label (MA.QUEUES). This property can be listed multiple times declaring many labels, but remember, once you start declaring labels, you must include all the ones desired. If no labels are declared, then all labels are selected.

Master Agent Swap Variable(s), not to be confused with ECA Variables, are optional and can be located anywhere after the first property. This is a very powerful concept to load Master Agent queues tailored to the specifics of an ECA trigger. The Master Agent Swap Variable is on the left side (of =) of the property. The right side of the property is the actual value that will be swapped (e.g. literal, ECA Text Keyword, ECA Variable, etc). The reference '{taskuser}' above is an example of Master Agent Swap Variable using the ECA Variable '@SYSUSER' as the actual value that will be loaded into the Master Agent Queue at runtime (e.g. queue script line 'Task CUST.LIST {taskuser}').

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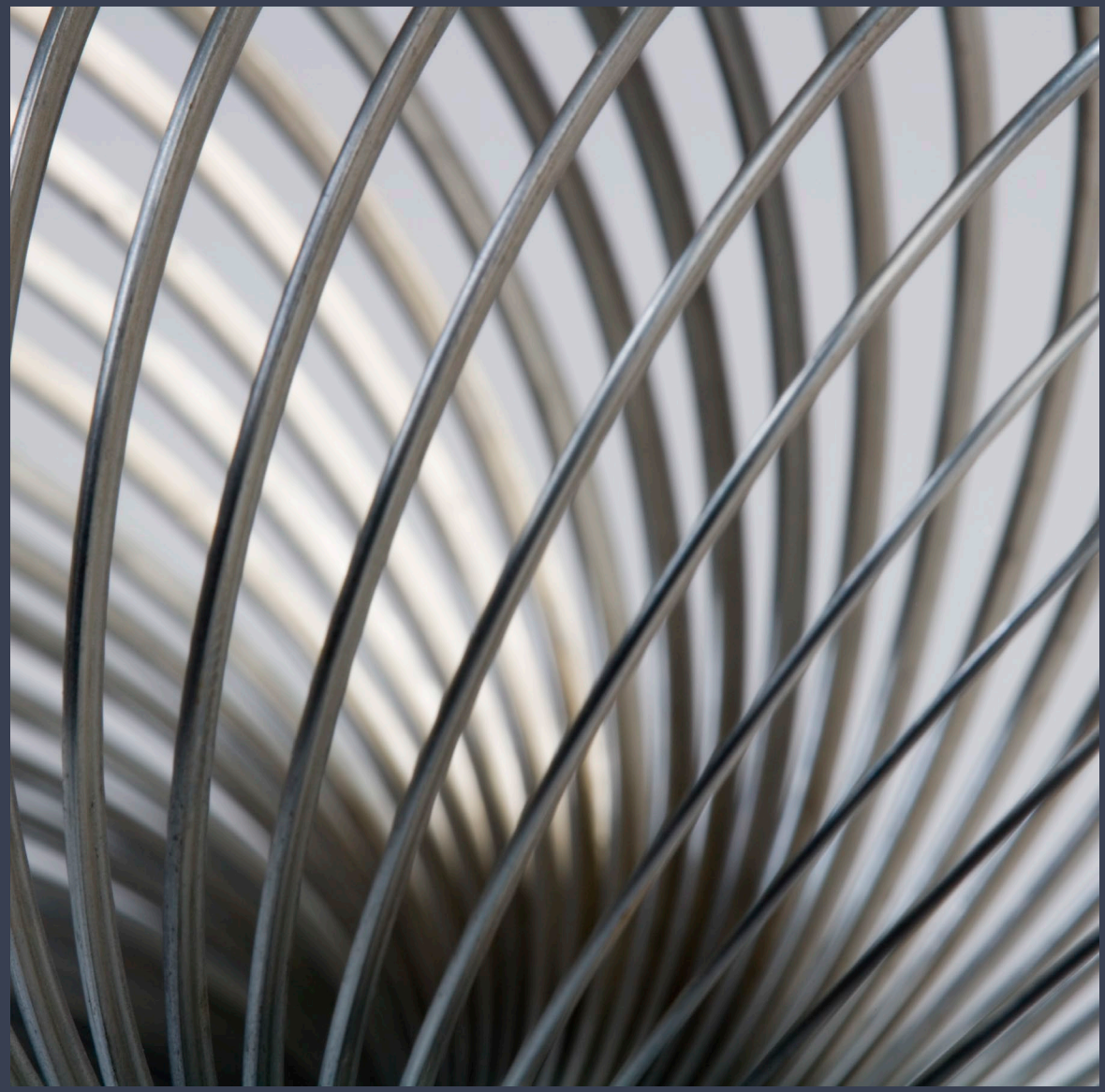
THANK YOU



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