

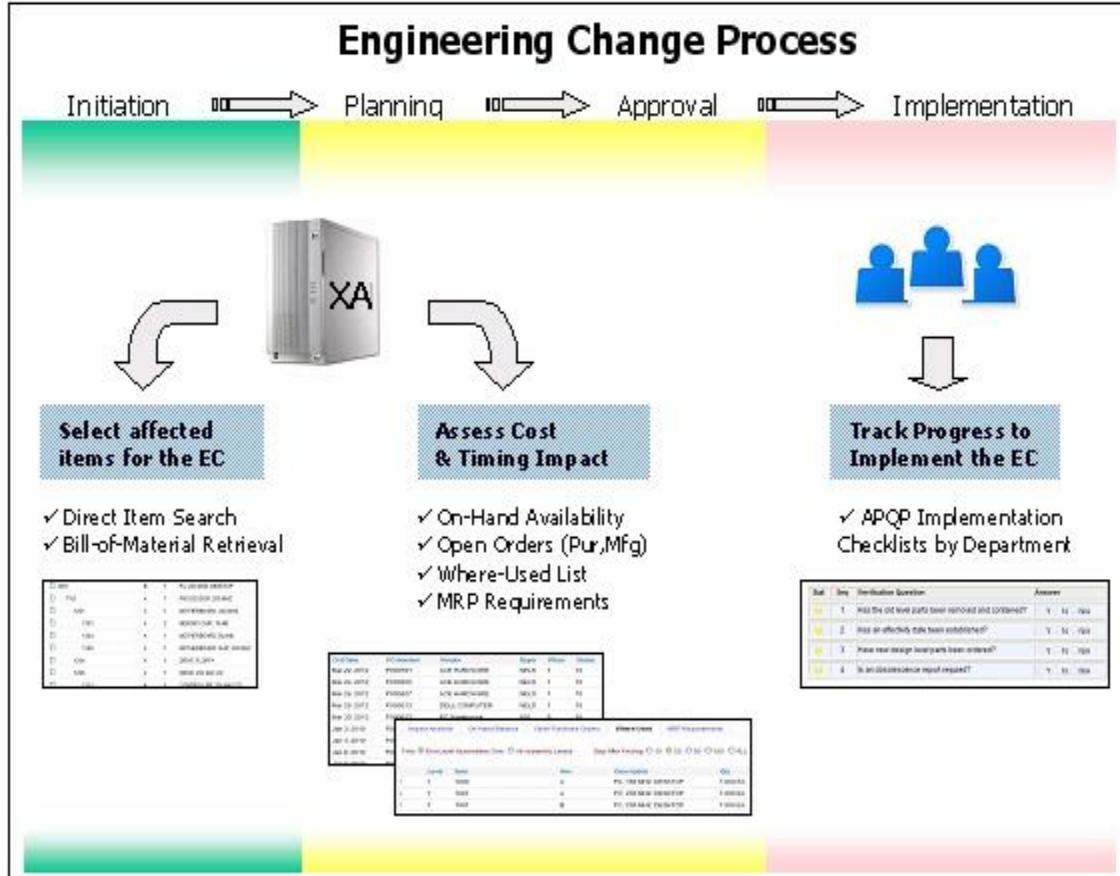
Engineering Change Management for XA

General Overview

The problem: How do you quickly and simply:

- See the **impact** of a change on PO's, MO's, on-hand inventory, or planning data?
- Know which changes will be ON TIME or LATE?
- Determine the exact status of a change? (Where is it in the process?)
- Maintain effective cost control of changes?
- Have one web "portal" that keeps track of all documents, tasks, approvals, workflows, processes, and people related to a change?

Change Management for XA is the answer. This is a web-based application to simplify, facilitate, and shorten the process of creating and managing ECs. It helps to lower costs by streamlining EC management and providing "impact analysis" to see the effect of a change on your XA system BEFORE the actual change occurs.



Benefits: Problems That Are Solved

- **Status tracking** of Engineering Changes is quick and easy from ONE portal
- **Cost Management** of changes
- **TASK MANAGEMENT**: automated workflows, approvals, and notifications for every step in the EC process
- **XA Impact Analysis** to see the how a change will affect your XA system:
 - o Purchase Orders
 - o Manufacturing Orders
 - o Inventory
 - o Planning Data
- Ability to know who is working on what ... and when a task is due
- Knowledge of any EC that will be late or over budget
- Time Management—how long did an EC take? Why was it with Joe for three days? How long did it take to complete a change?
- Backup assignments to automatically move tasks to another person if they sit for more than a specified amount of time.

New Engineering Change ENGINEERING CHANGE

Current Status: 10 [Initiator] Assigned to Robert Pozsgai on 05/10/2011 at 12:40:41 PM Back to My Documents Help

Description Parts Cost Impact Tracking Checklists Issues Files E-Mail Status

Type of Change: Design Process Supplier

Source of Change: Customer Driven Internal

Method of Changeover: Immediate Running Update/Correction

Style of Changeover: Individual Simultaneous

BOM Update Required: Yes No

Reason for Change: Design Change

Customer Requirement: Quote Approval Notify Only None

Customer EC Number: TRF5540

EC Number: **New EC**

Created By: Robert Pozsgai

My Department Manager: Joseph Burton

Date Created: May 10, 2011 12:40:41 PM

Due for Approval: May 19, 2011

Response Due to Customer: May 20, 2011

Date Sent to Customer:

Changeover Date:

Brief Description: Window Regulator Motor Yoke Plating/Material Change

Our Plants Impacted: Dunbar Greenville South Haven

Customer Plants Impacted: Wilmington

Programs Impacted: Customer: Chrysler Program:

Add to List Delete Selected

Chrysler: MK - Patriot/Compass

The system provides users with a flexible yet formal way to get tasks completed quickly, get information circulated, and get changes communicated and approved. Users can quickly access all ECs and tasks, see the status of each, and get all the necessary information from a single web portal.

Key Features of the System

Some of the unique design aspects of the EC Management System come from the “process management” approach found in MKA’s EC Management. More than just workflow, “Business Process Automation” is built into the system to:

- Manage information throughout an AUTOMATED PROCESS.
- Have access to all related information from a SINGLE PORTAL.
- See how changes IMPACT XA.
- Show the status of every EC at all times.
- Trigger action (provide conditional routing of information).
- Seamlessly route documents and information to users, even backup personnel.
- Ensure there is follow-up on an EC or Open Issue.
- Ensure that everyone who needs information gets it—at the right time.
- Manage and measure the TIME it takes to act on a document, or EC.
- Establish, coordinate, and manage priorities or “lateness.”
- See the workload an each user.
- Automatically keep management “aware” without generating more paper.
- Create simple or complex workflows that provide structure and flexibility.
- Provide visibility and accountability to EC’s, Open Issues, e-mails and related files.
- Reduce or eliminate “islands of information” (standalone spreadsheets, databases, etc.).
- Create, capture, and use documented, repeatable processes.
- Seamlessly integrate information from multiple systems or databases.
- Integrate people within AND outside your enterprise.
- Use CHECKLISTS and OPEN ISSUES.
- See a complete audit trail and history of all actions.

All Engineering Changes

Filter: By Created All Open

Assigned to Me

By Assignee

By Created

By Creator

By Customer

By Due Date

By Number

By Part

By Plant

By Status

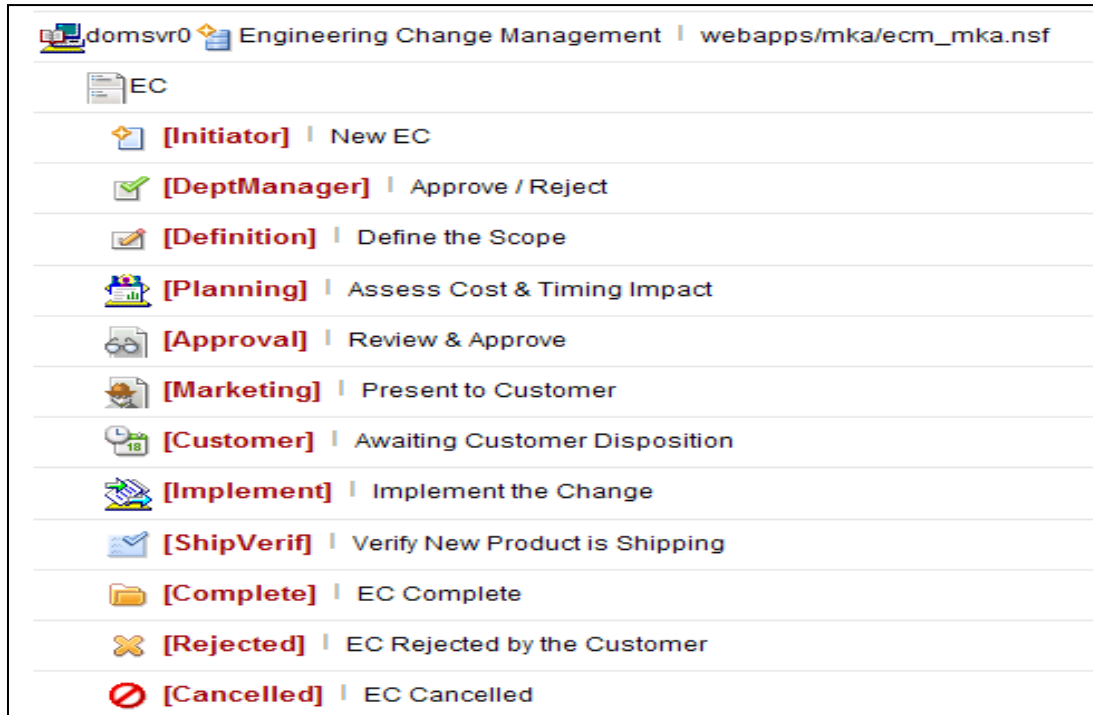
By Type

My Changes

		Status	Assigned To	Programs
		10 [Initiator]	Robert Pozsgai	Chrysler: K/KK - Nitro/Liberty ;Chrysler: MK - Patriot/Compass ;Chrysler: ND/NM - Dakota 4 Door
		30 [Definition]	Bryan Littman	Honda: 2HP - Pilot
		80 [Implement]	Julie Walters, Charlie Wa ... (14)	Toyota: 180L - Tundra Truck
		90 [ShipVerif]	William Delaney	Chrysler: JC49 - Journey

How It Works and What It Does For You

The system is implemented based on the users, workflows, “rules,” notifications, forms, approvals, data needs, and specific processes in your company.



It is a system that is used to capture the specific information and processes that you need. The process is developed around the way information should move in your company related to all ECs and their impacts on XA. Different situations can have different “rules” or processes. The system incorporates your forms and data while leveraging your processes and/or rules. Data elements can be table-driven or captured from other places in your network. Training is easy. You are able to:

- use XA information
- eliminate unnecessary steps
- integrate users and tasks
- speed-up processes

A process is established by defining an activity and by indicating “previous” and “next” activities. Each step receives its own graphic icon to help make tracking EC's easy. Each workflow step correlates to an application “Role.” Individuals are linked to a Role based on the e-mail Address Book.

All information is accessible electronically, including documents, e-mails, and files.

New File Registration for Change # EC000016 on Nissan: QW - Frontier BRAZIL, New spec for second side Help

File Description

Project: **Nissan: QW - Frontier BRAZIL** Date Created: 01/31/2011 02:25:43 PM EST

Document Relationship: **EC000016** Created By: CN=Robert Pozsgai/O=mka

Description: **New spec for second side**

File Attachment:
To create a file hyperlink, copy and paste the file path to the field below

File HyperLink:
A file path in this field will supercede the attachment

File Description:

File Sections:

- APQP and Report Out's
- DFMEA
- DVPR
- Engineering
- Engineering Change Documentation
- Input/ Design Review/ Output Checklists
- Installation Instructions
- Manufacturing
- Math Model Analysis (FEA, Mold Flow, Warp Ar
- PPAP, PSW, ISIR

Store the file in sections like tabs in a binder
Hold the Ctrl key to select more than one

File Security: Enable Disable
All users have access to this file

Authorized to Edit:
Allow others to change and resave this file
Type first few characters of name to search

Notify Others? Yes No
Let others know this file is available

◆ Required Fields

The following pages show more details of how the system works and what it provides for the users.

Visibility

Easy-to-use view lists and forms present the information in an organized manner and allow initiation, approval, review, update, and release of engineering changes.

The views can be created using any data element in the Engineering Change so that critical information is instantly highlighted.

- Where is it... who's working on it right now?
- What is the status?
- What are we working on for a specific customer or program/project?
- What parts have pending Engineering Changes and what is the effectivity?
- What will be the impact to XA?

New Engineering Change

Current Status: 10 [Initiator] ♦ Assigned to Robert Pozsgai on 05/10/2011 at 12:40:41 PM

ENGINEERING CHANGE

◀ Back to My Documents Help

Description
Parts
Cost Impact
Tracking Checklists
Issues
Files
E-Mail
Status

Type of Change: ♦ <input checked="" type="radio"/> Design <input type="radio"/> Process <input type="radio"/> Supplier Source of Change: ♦ <input checked="" type="radio"/> Customer Driven <input type="radio"/> Internal Method of Changeover: ♦ <input type="radio"/> Immediate <input checked="" type="radio"/> Running <input type="radio"/> Update/Correction Style of Changeover: ♦ <input checked="" type="radio"/> Individual <input type="radio"/> Simultaneous BOM Update Required: ♦ <input checked="" type="radio"/> Yes <input type="radio"/> No Reason for Change: ♦ Design Change Customer Requirement: ♦ <input checked="" type="radio"/> Quote <input type="radio"/> Approval <input type="radio"/> Notify Only <input type="radio"/> None Customer EC Number: TRF5540	EC Number: New EC Created By: Robert Pozsgai My Department Manager: Joseph Burton <small>Type first few characters of name to search</small> Date Created: May 10, 2011 12:40:41 PM Due for Approval: ♦ May 19, 2011 Response Due to Customer: May 20, 2011 Date Sent to Customer: Changeover Date:
Brief Description: ♦ Window Regulator Motor Yoke Plating/Material Change Full Scope of the Change: <div style="border: 1px solid #ccc; height: 40px; width: 100%;"></div>	Our Plants Impacted: ♦ <input checked="" type="checkbox"/> Dunbar <input type="checkbox"/> Greenville <input type="checkbox"/> South Haven Customer Plants Impacted: Wilmington Programs Impacted: ♦ Customer: Chrysler Program:

Add to List
Delete Selected

Chrysler: MK - Patriot/Compass

Content and Navigation

All Engineering Changes

Filter: By Customer For: Chrysler Select: 2010 D2/DJ - 3500 Pickup All Open

	Status	Assigned To	Programs
	10 [Initiator]	Robert Pozsgai	Chrysler: 2010 D2/DJ - 3500 Pickup; General Motors: GMT345 - Hummer
	10 [Initiator]	Robert Pozsgai	Chrysler: 2010 D2/DJ - 3500 Pickup; Chrysler: PM49 - Caliber
	10 [Initiator]	Robert Pozsgai	Chrysler: 2010 D2/DJ - 3500 Pickup; Chrysler: PM49 SRT4 - Caliber SRT4
	10 [Initiator]	Robert Pozsgai	Chrysler: 2010 D2/DJ - 3500 Pickup; Chrysler: PT44 - PT Cruiser
	20 [DeptManager]	Robert Pozsgai	Chrysler: 2010 D2/DJ - 3500 Pickup

Show: 5 | 10 | 25 | 50 | 100 | 250 entries

This view of the application shows all Changes **By Customer** for the **Chrysler D2/DJ** program. Users have many options available to help them quickly and efficiently find the EC of their choice. In addition, the ECM System provides both an EC Search and full text Search option. The EC Search option allows the user to type in the first few characters of an EC number and then select from a list of matches. The full text Search option allows a user to key in any text to be found anywhere in an EC. The System will return a list of EC documents that contain the entered search string.

Color codes in the views indicate the timing of each EC relative to their due dates – whether they are on schedule to meet an internal due date, or in the cases of customer initiated requests, whether they are on schedule to meet a customer due date.

Forms—Tailored to Your Needs

To manage all of the data necessary to create and implement an engineering change, organization is required. The example below uses a form designed for a typical manufacturing company to provide a structure for managing information.

Each field is secured by user and workflow step. Options within this example include separate tabs to spell out all the affected part numbers, assess the impact cost, manage the Implementation Checklists, track Open Issues, list all Related Files, collect relevant E-Mail and document the EC status. Everything related to this document is stored in one place to provide a centralized record of an Engineering Change.

The screenshot displays the 'New Engineering Change' form. At the top, it shows the current status as '10 [Initiator] Assigned to Robert Pozsgai on 01/31/2011 at 02:18:43 PM' and includes navigation links for 'Back to My Documents' and 'Help'. The form is organized into several sections with tabs for 'Description', 'Parts', 'Cost Impact', 'Tracking Checklists', 'Issues', 'Files', 'E-Mail', and 'Status'. The 'Description' tab is active, showing fields for 'Type of Change' (Design, Process, Supplier), 'Source of Change' (Customer Driven, Internal), 'Method of Changeover' (Immediate, Running, Update/Correction), 'Style of Changeover' (Individual, Simultaneous), 'BOM Update Required' (Yes, No), 'Reason for Change' (dropdown), 'Customer Requirement' (Quote, Approval, Notify Only, None), and 'Customer EC Number'. On the right side, there are fields for 'EC Number: New EC', 'Created By: Robert Pozsgai', 'My Department Manager' (searchable), 'Date Created: Jan 31, 2011 2:18:43 PM', and several date pickers for 'Due for Approval', 'Response Due to Customer', 'Date Sent to Customer', and 'Changeover Date'. Below these are sections for 'Brief Description', 'Full Scope of the Change', 'Our Plants Impacted' (Dunbar, Greenville, South Haven), 'Customer Plants Impacted', and 'Programs Impacted' (Customer and Program dropdowns). An 'Add to List' button is also visible.

Selecting affected parts directly from XA ensures accuracy and affords users the convenience of not having to go to XA to investigate a change.

These types of forms are relatively easy to modify based on your individual requirements. The data elements in the illustrations are not necessarily required for each implementation.

Examples follow.

This is an example of a **File Registration** form which is used to associate related files in a secured format.

New File Registration for Change # EC000016 on Nissan: QW - Frontier BRAZIL, New spec for second side Help

File Description

Project: **Nissan: QW - Frontier BRAZIL** Date Created: 01/31/2011 02:25:43 PM EST

Document Relationship: **EC000016** Created By: CN=Robert Pozsgai/O=mka

Description: **New spec for second side**

File Attachment:
To create a file hyperlink, copy and paste the file path to the field below

File Security: Enable Disable
All users have access to this file

File HyperLink:
A file path in this field will supercede the attachment

Authorized to Edit:
Allow others to change and resave this file
Type first few characters of name to search

File Description:

File Sections:
APQP and Report Out's
DFMEA
DVPR
Engineering
Engineering Change Documentation
Input/ Design Review/ Output Checklists
Installation Instructions
Manufacturing
Math Model Analysis (FEA, Mold Flow, Warp Ar
PPAP, PSW, ISIR
Store the file in sections like tabs in a binder
Hold the Ctrl key to select more than one

Notify Others? Yes No
Let others know this file is available

Required Fields

Users can associate a file by either attaching it as a static image in the Registration form, or by opting to save the file path as a hyperlink to the file as it resides on a shared corporate network. Both options have advantages depending on the type of file being stored.

Users can opt to enable file Security if it contains sensitive information, such as costing from the Estimating department or quotes from suppliers.

Authorization to edit a registered file is restricted by default, but the initiator of the document can choose to allow authorized editors by selecting names in the appropriate field.

As a convenience, the initiating user may check the box to automatically notify a specified list of users that a new file has been associated to an EC and is now available for review.

Storing related files in secured Registration documents ensures that all relevant information is kept with the EC document and is available to approvers (and auditors) on demand by simply opening the EC itself.

The following example illustrates a dynamic **Open Issue** for an EC.

New Issue for EC000016 - New spec for second side
Current Status: 10 [Initiator] ♦ Assigned to Robert Pozsgai on 01/31/2011 at 02:28:47 PM

Description Related Files Status

Subject: Department:

Assign To: Plant Location:
Type first few characters of name to search

Severity: 1 2 3 4 5
(Default Severity) = Must be fixed prior to PSW or PPAP

Date Due:

Date Complete:

Issue Description:

♦ Required Fields

Submit Back to All Changes

Issues facilitate the solicitation of information from users outside the normal workflow definition. These users may be internal, (specialty personnel) or external (suppliers or customers). Users external to the company can respond directly through a standard internet web browser. E-Mail notifications include a hyperlink to the document itself. When a user clicks the link, they will be prompted to log in with their username and password in order to access the document.

Application security prevents external users from seeing documents to which they are not authorized. Typically, external users only have access to see documents they have either created or to which they are assigned.

Options within the Issue include a rating for Severity and categories by Department and Location. These fields provide the ability to sort and report Issues in convenient listings.

Expediting of Issues is performed by the workflow engine based on the Due Date selected. Expediting options may include a reminder message to the assigned user, or full document reassignment to a backup user.

Issues play an integral role in managing Engineering Changes and storing them with the EC is an effective way to keep all related information together.

Integration with XA

One of the most significant advantages of this solution is the ability to pull information from other databases in the network and work with XA. Action can be taken and decisions can be made instantly, with all supporting data necessary within a simple, easy-to-use web page. This links together the “silos” or “islands” that exist in many Information System environments.

The EC Management solution leverages XA data for affected parts by providing direct search capability for parts and assemblies. Affected parts can even be selected from the full indented bill-of-material.

XA Part Search

Site: MTL ENG PRD

Search By: Part Number Description Drawing Number Customer Number

Method: Starts with... Contains...

Type first few characters of text to search

Dwg Number	Type	Class	NOPWU
4	03		6
1	02		1

Select Affected Parts

✓ Affected Part

Assembly	Lev	Part Number	Rev	Qty	Description	Class	Type
1001 Rev.B - PC, 200 MHZ, DESKTOP							
	0	1001	B	1	PC, 200 MHZ, DESKTOP		
	1	. 1101	A	1	PROCESSOR, 200 MHZ	02	1
	2	. . 1201	A	1	MOTHERBOARD, 200 MHZ	02	1
	3	. . . 1301	A	2	MEMORY CHIP, 16 MB	03	4
	3	. . . 1304	A	1	MOTHERBOARD, BLANK	03	4
	3	. . . 1306	A	1	MOTHERBOARD CHIP, 200 MHZ	03	4
	2	. . 1204	A	1	DRIVE, FLOPPY	03	4
	2	. . 1206	A	1	DRIVE, 20X MAX CD	02	1
	3	. . . 1311	A	1	CONTROLLER, 20X MAX CD	03	4
	3	. . . 1314	A	1	LASER, 20X MAX CD	03	4
	3	. . . 1316	A	1	CASE, CD	03	4
	2	. . 3001	A	1	DRIVE, 3.2GB	04	4
	1	. 1104	A	2	SPEAKERS	03	4
	1	. 1105	A	1	MOUSE	03	4
	1	. 1106	A	1	KEYBOARD	03	4
	1	. 2001	A	2	MONITOR, 15" VGA	04	4

Effectivity and Impact Analysis

Although some Engineering Changes must be implemented as soon as possible, establishing the most appropriate **Effectivity Date** for an Engineering Change can be a critical event in minimizing the cost of the change. Based on the Inventory and Order (Customer Order or Replenishment Order) status, the wrong timing for a change could lead to excessive re-work, scrap, cancellation charges, large write-offs, or other avoidable costs.

The Engineering Change Management application provides ready access to critical XA information to establish the best date and to facilitate Inventory Disposition and Order Action activities.

1106 Rev. A - KEYBOARD [Back to EC000014](#) **PART RECORD**
 for EC000014

Impact Analysis | On Hand Balance | Open Purchase Orders | **Where Used** | MRP Requirements

Part Number: 1106 | Revision: A | Description: KEYBOARD | Supplier: | Charge to Customer: Yes No

Site ID: ENG | Item Type: 4 | Item Class: 03 | Drawing Number: | Customer Part Number:

PLANNING Cost to Implement | Tooling Cost: | Engineering Cost: | Testing Cost: | Comment:

PRODUCTION CONTROL | Obsolescence Cost: | Premium Cost: | Rec Effectivity Date: |

CUSTOMER SERVICE | Changeover Date: |

Ord Date	PO Number	Vendor	Buyer	Whse	Status	Order Qty	UOM	Due Date	Qty Rec
Mar 22, 2012	P000591	ACE HARDWARE	NELS	1	10	1	EA	Mar 22, 2012	0
Mar 24, 2012	P000606	ACE HARDWARE	NELS	1	10	1	EA	Mar 24, 2012	0
Mar 24, 2012	P000607	ACE HARDWARE	NELS	1	10	1	EA	Mar 24, 2012	0
Mar 26, 2012	P000613	DELL COMPUTER	NELS	1	10	1	EA	Mar 26, 2012	0
Mar 30, 2012	P000623	PC Warehouse	100	9	10	200	EA	Mar 30, 2012	0
Jan 3, 2010	P000627	ACE HARDWARE	NELS	1	10	1	EA	Jan 3, 2010	0
Jan 3, 2010	P000628	ACE HARDWARE	NELS	1	10	1	EA	Jan 3, 2010	0
Jan 8, 2010	P000642	RADIO SHACK	NELS	1	10	2	EA	Jan 4, 2010	0
Jan 8, 2010	P000643	RADIO SHACK	NELS	1	10	2	EA	Jan 4, 2010	0

Impact Analysis | On Hand Balance | Open Purchase Orders | **Where Used** | MRP Requirements

Find: End Level Assemblies Only All Assembly Levels | Stop After Finding: 10 25 50 100 ALL | Refresh

Level	Item	Rev	Description	Qty	Effective
1	1	1000	A	PC, 166 MHZ, DESKTOP	1.000 EA
2	1	1001	A	PC, 200 MHZ, DESKTOP	1.000 EA
3	1	1001	B	PC, 200 MHZ, DESKTOP	1.000 EA

Users have direct "live" access to item availability (On Hand, On Order), a chronological view of Supply and Demand (Customer Orders, Purchase Orders, Manufacturing Orders) and a choice of an indented Where-Used list or top level assembly Where-Used list.

PROCESS Management, integration, and the ability to MOVE INFORMATION and TRIGGER ACTION make EC Management with XA a time-saver with a high ROI. Inventory obsolescence can be greatly reduced.

All Checklists

Filter: By Department For: SQA All Open

- By Assignee
- By Department
- By Due Date
- My Checklists

EC Num	Open	Green	Yellow	Red	Status	Department	Assignee	Assigned
EC000014	<input checked="" type="checkbox"/>	1	1			SQA	Chris Timmerman	Jan 13, 2011

Show: 5 | 10 | 25 | 50 | 100 | 250 entries

Each EC is completed by tracking the progress of **Implementation Checklists**. Each department involved in the Change must respond to a series of questions in order to document the completion of their work. This documentation might also involve other PC files or paperwork. In fact, some questions will require a user to store the file as evidence for completing the work.

Checklist questions are internally maintained and can be updated anytime by an application administrator.

The view show below depicts a listing of **Open Issues By Assignee**. Issues sometimes arise during the processing of Engineering Changes and most companies simply maintain these in yet another spreadsheet file. With ECM, Issues are kept with the Change and can be managed in tandem with the same flexible expediting rules that are available to the EC itself. Keeping information together helps everyone involved to stay "on the same page" and work to accurate information.

All Issues

Filter: By Assignee For: Bryon Higgins All Open

- Assigned to Me
- By Assignee
- By Date Due
- By Department
- By Project
- By Status
- My Issues

Status	Issue #	Subject	Reviewer
	037.013	Send the notification message back to me.	Bryon Higgins
	GSX R410A.001	Updated drawings are not yet available	Bryon Higgins

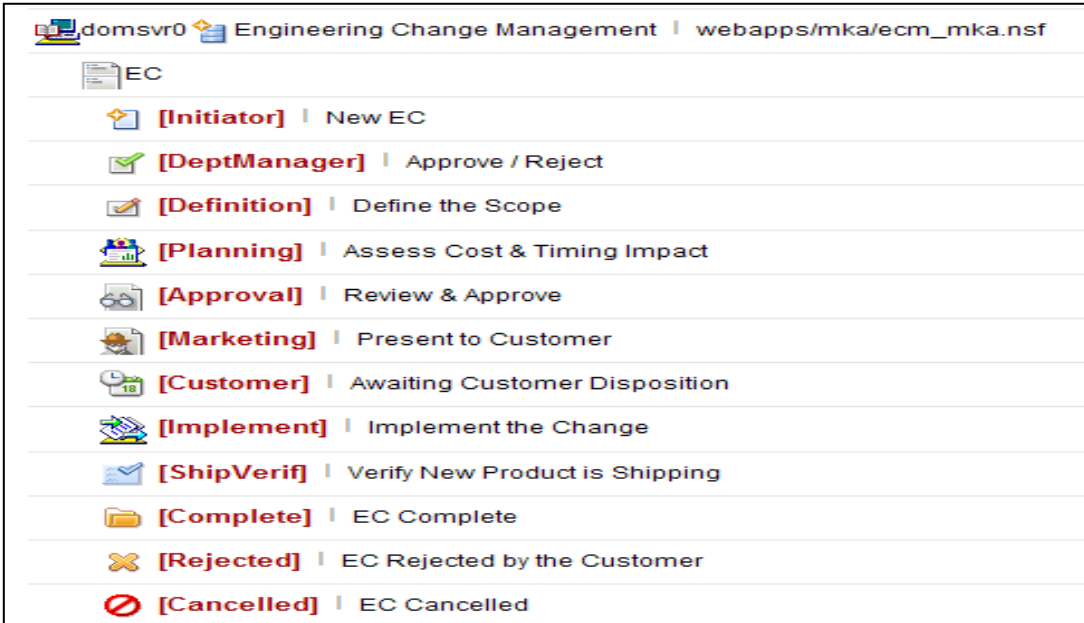
Show: 5 | 10 | 25 | 50 | 100 | 250 entries

Defining Your “Process Flows”

Rapid, effective communication of information and automated processes are the keys to minimizing time and costs for engineering changes.

Process flows can be quickly and easily defined. These flows help to formalize your company's *standard engineering change process*, yet still allow for process variations and changes “on the fly.”

The example below shows how a “**process flow**” can be defined:



domsvr0 Engineering Change Management webapps/mka/ecm_mka.nsf	
EC	
[Initiator]	New EC
[DeptManager]	Approve / Reject
[Definition]	Define the Scope
[Planning]	Assess Cost & Timing Impact
[Approval]	Review & Approve
[Marketing]	Present to Customer
[Customer]	Awaiting Customer Disposition
[Implement]	Implement the Change
[ShipVerif]	Verify New Product is Shipping
[Complete]	EC Complete
[Rejected]	EC Rejected by the Customer
[Cancelled]	EC Cancelled

A process is established by defining an activity and by indicating “previous” and “next” activities. Each step receives its own graphic icon to help make tracking EC's easy in a list. Each workflow step correlates to an application “Role.” Individuals are linked to a Role based on the e-mail Address Book.

As workflow steps are completed, the Engineering Change document moves on to the next defined step in the process. When a user clicks the “Submit” button, the document is saved, updated with the reviewing user name and time stamp, and an e-mail notification is sent directly to the next assigned user in the process. E-mail templates defining the content of the notifications are established in each workflow definition document.

Some steps are always assigned to the same users, while other steps may route to different users depending on the content of the Change itself. Still other cases may allow for a user to select the next reviewer in a field directly on the form.

The robust flexibility of the workflow engine ensures that the ECM System can accommodate a wide array of review and approval algorithms while meeting stringent auditing standards.

Expediting/Backups is a critical feature to effectively manage documents through a process.

The screenshot shows the 'Edit Workflow Backup' configuration page. The page title is 'Edit Workflow Backup' and the breadcrumb is 'Backup for Primary Robert Pozsgai/mka | Engineering Change Management EC'. The page is divided into several sections:

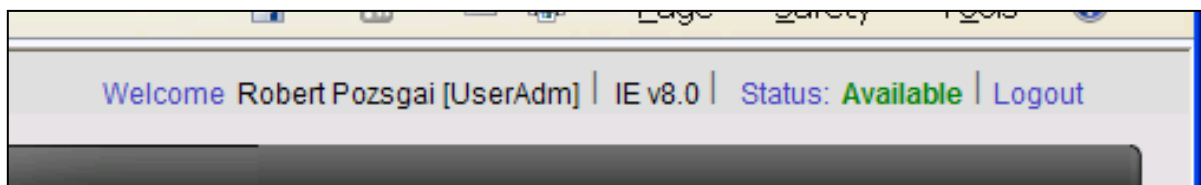
- Primary:** Contains a text field for '*Name' with the value 'Robert Pozsgai/mka'. Below it are two checkboxes: 'Not Available' (unchecked) and 'Use?' (checked) with the label 'Out of Office'.
- Backup:** Contains a section for 'Action' with four radio button options: 'Backup' (selected), 'Backup All', 'Backup first then next approver', and 'Next approver'. To the right, there is a 'Names' field with the value 'Bryon Higgins' and a 'Not Available' field.
- Time Limit:** Contains a 'Time Limit (hours)' field with the value '16' and an 'Include Weekends' checkbox (unchecked).
- Server/Path/Function:** Contains a 'Server' field with 'domsvr0/mka', a 'Name' field with 'Engineering Change Management', a 'Path/File' field with 'webapps\mkalecm_mka.nsf', a checked 'Use current path & server' checkbox, a 'Form' field with 'EC', and a 'Function' field with '[Approval]'.

At the bottom of the form, there are three buttons: 'Save', 'Delete', and 'Cancel'.

Each user in the System can be defined with their own backup and expediting rule for each workflow step in the process. Expediting rules can consist of a simple reminder e-mail notification, automatic document reassignment to a backup user or automatic bypass to the next reviewer.

Automatic document reassignment may occur if a document sits idle beyond the set time-limit for the current user/workflow step. Each workflow participant should have a backup user defined in the System. Backup users will be used when the primary user is unavailable or, in the case of expediting, when a document sits idle for too long.

Users may toggle their availability by simply clicking a **Status** link at the top of the application web page.



Summary

Easy-to-use view lists and forms present the information in an organized manner and allow initiation, approval, review, update, and release of every engineering change.

Engineering Change Management **links data, documents, people, processes, Infor XA, and other systems into a single “time-scheduled” system for managing changes. Information “moves” to the appropriate user and “triggers” them to take action within a certain timeframe.** Users don’t have to go look for data or look for what to do next—it comes to them *as part of the process that you define.*

The Implementation Methodology

MKA uses a proven, successful, 1-2-3 step implementation methodology.

The Roadmap

MKA works with your company to create a “Roadmap” for improved EC Management. Many companies spend years struggling with how to best manage Engineering Changes. MKA has a process to ensure a company has an agreed upon vision and system definition that meets the final requirements and needs of the company. This is the result of the Roadmap process. This process defines and documents user requirements, system requirements, and a shared vision for EC Management.

The Roadmap process culminates with the **Final Review Signoff Agreement**. This Agreement serves as the definition of a company’s objectives, priorities, processes, flows, data requirements, and other details about how an Engineering Change Management System should work. The Agreement is the agreed upon and documented **vision** and **project scope** for the company.

The Final Review/Signoff Agreement will reflect your needs and how the system will work. The Agreement is based on the team’s input of how a system should work. The Agreement is the critical first step (Phase 1) in the implementation.

At the conclusion of the Roadmap, the Executive Sponsor, Project Leaders, and key users agree to and sign-off on the details of a System. Thus, the Agreement serves as the AGREED UPON system/project vision and scope.

The Final Review Agreement is used as the system and project definition. It is the critical deliverable of Phase 1. MKA’s overall implementation methodology includes:

- Phase 1: Roadmap Process resulting with the Final Review/Signoff Agreement
- Phase 2: Implementation Setup, Training, and Prototyping (as needed and defined in the Final Review Signoff Agreement)
- Phase 3: Pilot and Final Testing

Summary

Most companies do not have the time or experience to define and document a good Roadmap of their real needs and how a system SHOULD work for the company to more effectively manage engineering changes. MKA has the expertise, background, and experience to create a Roadmap with your team. The “Roadmap” provides a documented vision of how the company will utilize an automated process to streamline EC Management.

More About the Roadmap Process

The main topics covered in the Roadmap include dozens of things, such as:

- Key Objectives for the system
- Users and their roles
- Workflow/process steps and approvals
- Data needs (from where? to whom? When?)
- Forms definitions
- Database access/integration and requirements, including source data needs
- Costing needs
- Measurements (How long does an EC take to process? What are the workloads? Etc.)
- The agents and triggers needed so that information “flows” to the right users at the right times using automatic notifications (based on defined conditions)
- e-mail requirements and how they are a part of the process
- Needed “Views” of EC’s, Resources, Tasks, Priorities, Costs, ...
- Other relevant aspects of Engineering Change Management and tracking
- The key systems and applications that need to integrate with the Engineering Change Management System (XA integration)

Some of the key features to streamline the EC Management process include:

- EC creation
- XA integration
- Status of (visibility to) all EC’s and quick access to EC’s in a variety of ways
- Electronic forms
- Automated Task management and workflows
- The ability to handle easy and complex changes
- Issues management (open tasks)
- E-mail and file/document integration to the specific EC
- Changes requests and change management
- Statistics about the “time” required to process an EC
- IMPACT ANALYSIS to see an EC’s impact on XA
 - Purchasing
 - Manufacturing
 - Planning
 - Inventory
- Internal and Customer initiated changes and EC “types”

MKA Industry Experience

MKA has a highly skilled team of consultants, designers, and developers, with between 17 and 42 years of experience. We have extensive skills in Engineering Processes, Business Management, Information Systems, and over 30 years with XA. It takes experienced people to define, document, and perform the implementation and make sure the application works for you. Our customer success rate is VERY HIGH because of our tremendous experience, industry knowledge, and Process Definition skills that are part of the methodology.

The final result is a **full-service implementation and successful project.**