

## Minimize Your Risks • Maximize Your Returns

### MAPICS Upgrades are Easier with Upgrade Assistant

CISTECH's **Upgrade Assistant** tool automates the labor intensive process of determining the impact to your custom applications of MAPICS release upgrades.

Upgrade Assistant analyzes MAPICS modifications, custom application objects including Integrator objects, queries and reports that access MAPICS data and program libraries. It then identifies programs that are impacted by changes to MAPICS programs or files. With this information you can effectively estimate your migration effort, plan the steps required for a successful migration, and minimize risks of program errors after upgrade.

#### Benefits of using Upgrade Assistant:

- Eliminate the time required to manually identify program and file changes
- Accurately estimate the complexity and effort of your upgrade
- Reduce risks of information loss and system downtime caused by unidentified changes
- Easily manage your upgrade with downloadable Excel file

#### Upgrade Assistant Features:

- Identifies modified MAPICS program objects
- Identifies custom programs that use MAPICS files, including Integrator objects
- Identifies logical files and queries built over MAPICS physical files
- Prints before and after file layouts for MAPICS files used by your code
- Identifies objects affected when making application changes to an environment (such as moving from PDM to EPDM or from AM to IFM)
- Identifies triggers that you have added
- Creates a text file detailing affected objects

#### How it works:

The CISTECH Upgrade Assistant compares custom program libraries in your current MAPICS environment to the target environment, and determines whether MAPICS objects used by those libraries have been modified.

After comparing all library objects, a file is created to identify object changes, and indicates whether matching source code exists. Recommendations are made for appropriate actions to resolve object changes. This file can be downloaded to Excel to provide the basis for your upgrade project plan.

## UPGRADE ASSISTANT

### *Overview*

When a new XA Release is announced many customers delay their upgrade because of custom modifications, interfaces, and queries they have created to enhance their MAPICS solution. Others perform the upgrade on faith, unaware of potential risks or hoping it will not have a negative impact on their data or operations.

These leaps of faith are risky. Whether you have applied modifications to MAPICS programs, written custom applications to use MAPICS files, or created queries using the MAPICS database, there is risk involved in applying updates.

To upgrade to a new release, you must manually assess the effects of MAPICS changes to custom applications. This tedious and costly process leads many to opt out of the upgrade process, unable to take advantage of new MAPICS features. Often, becoming so far behind, that support becomes difficult.

It is possible to end the uncertainty, minimize the risk, and speed the upgrade process. Using the Upgrade Assistant, the analysis to identify changes and to manage the resulting integration effort becomes streamlined and efficient. CISTECH's 20 years of leadership in sales, implementation, and training of MAPICS software, led its development team to create this tool to benefit MAPICS customers worldwide.

The Upgrade Assistant performs an analysis of your custom application libraries. It compares objects in your custom environment against those changed between your current release and the new MAPICS release (including intermediate PCMs). The result is a list of custom objects that were affected, along with all the objects they reference (such as other programs called or files used). The results are provided in a file that you can download to Excel and use to manage your custom upgrade project.

In addition to assistance during upgrades, the tool can be used when making MAPICS application changes, such as moving from PDM to EPDM or from AM to IFM. The files used in the applications will be different, and the Upgrade Assistant will indicate which custom programs will be affected.

*Technical Description*

The CISTECH Upgrade Assistant provides a tool and methodology to strategically analyze custom enhancements to the MAPICS XA product and identify areas affected by release upgrades. Custom enhancements may include:

- Modified MAPICS program objects
- Custom programs that use or update MAPICS data base files
- Trigger Programs linked to MAPICS files, including Integrator objects
- Logical files built over MAPICS physical files
- Queries that use MAPICS files
- Hard coding of libraries found in custom CL programs

Using the Upgrade Assistant while following the “Five Phases of a MAPICS Upgrade” can help you reduce time and cost and you can be at the new release in record time.

The Five Phases are:

- Planning and Initial Upgrade
- Analysis and the Upgrade Assistant
- Integration
- Testing
- Final Upgrade and Go-Live

Phase 1 – Planning and Initial Upgrade

Begin your upgrade by reviewing information on the Infor E:Info web site. This valuable resource provides all the information you need to plan your upgrade. You will need to create a separate environment (do not share applications) and perform the upgrade of the MAPICS applications as directed. This environment should be brought up to the latest PCM level with all critical PTFs applied. It will be used for integration and testing of your customizations.

Phase II – Analysis and the Upgrade Assistant

This phase of the upgrade process involves two components – *Running the Upgrade Assistant* and *Analyzing the Results*.

First, you configure the Upgrade Assistant by defining the current and target MAPICS environment libraries, along with those used by your custom applications. Then you download the MAPICS informational PTFs that identify the file changes between your current and target releases. This may be several individual PTFs.

For example, if your current environment is MM, the target environment is NN, and all your custom code is contained in two libraries – CUSTOM and CUSTOMF, your configuration would be similar to this:

<b>Current</b>	<b>Target</b>	<b>Custom</b>
AMFLIB	AMFLIBN	CUSTOMF
AMTLIB	AMTLIBN	CUSTOM
AMALIB	AMALIBN	
AMXLIB	AMXLIBN	

When you run the Upgrade Assistant, it builds a file that identifies all the custom objects contained in your custom environment. It adds information for all the objects that are referenced by your custom code, including programs, files, etc. Using this information, it determines if the referenced object belongs to MAPICS and whether it has been changed by the new release level. It then indicates matching source was found on the system.

A printed report is generated that lists ***SYSCTL Changes*** between releases. This can be used to identify programs that use information from this major MAPICS system control file.

The ***Analysis Results*** file produced by the Upgrade Assistant is in standard comma-separated variable format (.csv) which you can download and import in to EXCEL for use in managing your integration effort. It includes columns for the following information:

Custom Library	Custom Object	Obj Type	Custom Object Description	Ref Obj Library	Referenced Object	Ref Obj Type	Referenced Object Description	Ref Obj Status	Action	Source Library	Source File	Source Member	Source Status
CISOFFER	AB0011C9	PGM	Multiple WIP Location Backflush	CISOFFER	AB0011C9	PGM	Multiple WIP Location Backflush	CUS	0	CISOFFER	AUTOBKFLSH	AB0011C9	
CISOFFER	AMBAIXFR	PGM	MPS 06030 EXT Promotional Pricing Execute extern	CISOFFER	AMBAIXFR	PGM	MPS 06030 EXT Promotional Pricing Execute extern	MOD	3	CISOFFER	PROMOTIONS	AMBAIXFR	
	AMBAIXFR	PGM	MPS 06030 EXT Promotional Pricing Execute extern	LIBL	MBMGFLA	DTAARA	Name of COM message file	MCH	3				Not Found
	AMBAIXFR	PGM	MPS 06030 EXT Promotional Pricing Execute extern	LIBL	AXZ40	PGM	CURRENCY CONVERSION ROUTINE	MNC	0	AMMLB	AMZSRC	AXZ40	Not Found
	AMBAIXFR	PGM	MPS 06030 EXT Promotional Pricing Execute extern	LIBL	AXPEMP1R	PGM	CSM Edit message processor G.S	MNC	0	AMMLB	AXPSRC	AXPEMP1R	Not Found
	AMBLADFR	PGM	MPS 06030 EXT Promotional Pricing Execute extern	LIBL	AMBLADFR	PGM	MPS 06030 D&P Promotion Selection Display file	MCH	2	CISOFFER	PROMOTIONS	AMBLADFR	
	AMBAIXFR	PGM	MPS 06030 EXT Promotional Pricing Execute extern	LIBL	Y2SNMGC	PGM	YAPROBJ Send a message SNDXXXMSG USING (API)	MNC	0	AMMLB	AMZSRC	Y2SNMGC	Not Found
	AMBAIXFR	PGM	MPS 06030 EXT Promotional Pricing Execute extern	LIBL	Y2RTJCR	PGM	YAPROBJ Retrieve attributes for job R6.1	MNC	0	M27179	QRPGSRC	Y2RTJCR	Not Found
	AMBAIXFR	PGM	MPS 06030 EXT Promotional Pricing Execute extern	LIBL	Y2QLVNR	PGM	YAPROBJ Qualify a name AS1400	MNC	0	Y2SRC	QRPGSRC	Y2QLVNR	Not Found
	AMBAIXFR	PGM	MPS 06030 EXT Promotional Pricing Execute extern	AMFLIBX	MBABRES6	FILE	Contract promotion item by promotion item	MCH	3	AMMLB	AMZSR3	MBABRES6	Not Found
	AMBAIXFR	PGM	MPS 06030 EXT Promotional Pricing Execute extern	AMFLIBX	MBBARES1	FILE	Contract header retrieval index	MCH	3	AMMLB	AMZSR3	MBBARES1	Not Found
	AMBAIXFR	PGM	MPS 06030 EXT Promotional Pricing Execute extern	AMFLIBX	MBABRES1	FILE	Contract promotion item retrieval index	MCH	3	AMMLB	AMZSR3	MBABRES1	Not Found
	AMBAIXFR	PGM	MPS 06030 EXT Promotional Pricing Execute extern	AMFLIBX	MBC6RES1	FILE	Quote/order header update index	MCH	3	AMMLB	AMZSR3	MBC6RES1	Not Found
	AMBAIXFR	PGM	MPS 06030 EXT Promotional Pricing Execute extern	AMFLIBX	MBSFRES0	FILE	Customer retrieval index	MCH	3	AMMLB	AMZSR3	MBSFRES0	Not Found
CISOFFER	AMBOPXFR	PGM	MPS 06030 EXT Calc Tax and Trade RS Execute extern	CISOFFER	AMBOPXFR	PGM	MPS 06030 EXT Calc Tax and Trade RS Execute extern	MOD	3	CISOFFER	PROMOTIONS	AMBOPXFR	
	AMBOPXFR	PGM	MPS 06030 EXT Calc Tax and Trade RS Execute extern	LIBL	MBMGFLA	DTAARA	Name of COM message file	MCH	3				Not Found
	AMBOPXFR	PGM	MPS 06030 EXT Calc Tax and Trade RS Execute extern	LIBL	JAEMXFR	PGM	GET MAPICS dir admin dir Execute external functio	MCH	2	AMMLB	AMSSRC	JAEMXFR	Not Found
	AMBOPXFR	PGM	MPS 06030 EXT Calc Tax and Trade RS Execute extern	LIBL	UAW2XFR	PGM	GET a/div fin data2 EXT Execute external functio	MCH	2	AMMLB	AMSSRC	UAW2XFR	Not Found
	AMBOPXFR	PGM	MPS 06030 EXT Calc Tax and Trade RS Execute extern	LIBL	UA7EXFR	PGM	TAX dir selected tax rds Execute external functio	MNC	0	AMMLB	AMSSRC	UA7EXFR	Not Found
	AMBOPXFR	PGM	MPS 06030 EXT Calc Tax and Trade RS Execute extern	LIBL	AXZ40	PGM	CURRENCY CONVERSION ROUTINE	MNC	0	AMMLB	AMZSRC	AXZ40	Not Found
	AMBOPXFR	PGM	MPS 06030 EXT Calc Tax and Trade RS Execute extern	LIBL	AXPEMP1R	PGM	CSM Edit message processor G.S	MNC	0	AMMLB	AXPSRC	AXPEMP1R	Not Found
	AMBOPXFR	PGM	MPS 06030 EXT Calc Tax and Trade RS Execute extern	LIBL	AMBOPXFR	PGM	EXT Accu Tax SurChg & Tax Execute external functio	MCH	2	AMMLB	AMSSRC	AMBOPXFR	Not Found

The analysis tool makes recommendations as to the action you should take for each referenced object. The recommended actions include:

- 0 – No action required for this object
- 1 – Recompile only
- 2 – Modified object requires detailed analysis
- 3 – Data Base Analysis is required

The first step of the data base analysis process involves reviewing the **Before/After Record Layouts** for changed MAPICS files that were generated by the tool. If you determine that the changes to a file are non-critical, you filter records in the spreadsheet that reference that file and change the action from a '3' to '1' to indicate recompile. If the changes are critical, you change the action flag to '2' indicating that a detailed review of the logic will be necessary. Critical changes may include changes in field length or type, change in keys or select/omit criteria, or deleted fields.

CISTECH UPGRADE ASSISTANT																
Date : 6/02/04		Physical File : AMFLIB7 /PSTRUC - M76-Product structure next assembly component														
Time : 13:00:24		File Creation Date : 1/10/10 Record Format Name : PSTRUC1														
Number of Physical File Member(s) : 1		Number of Logical File(s) : 11		Number of Field(s) : 30		Record Length: 203										
Mr Name	Description	Cr Date	La	Ch	Dr	La	Ch	Tm	# of Rds	Dited Rds	% Full	% Dtd	Rcd Cpsity	Byte Size	# of Physical Rds	# of Logical
PSTRUC		2/04/03	3/08/20	16:14:20					293	0	*NOMAX	.00	4284967288	89632		
Field	From	To	Length	Digits	Field Type	Decimals	Description									
PENBR	1	15	15		A		Parent Item Number									
USBR1	16	19	4		A		User sequence									
CINBR	20	34	15		A		Component Item Number									
USBR2	35	38	4		A		User sequence									
OPWU	39	42	4		A		Operation sequence in routing where first used									
LTACT	43	45	3	3	S	1	Component lead time adjustment									
FOPFF	46	48	3	5	P	4	Feature/options planning factor									
FOPCF	49	51	3	5	P	4	Feature/options cost roll-up factor									
EDACTM	52	55	4	7	P	0	Effective date from									
EDACTO	56	59	4	7	P	0	Effective date to									
FOPCD	60	60	1		A		Feature/option code									
FOPNO	61	62	2		A		Feature/option number									
MDATE	63	65	4	7	P	0	Date this record last maintained									
QCYBR	67	72	6	11	P	3	Quantity per unit									
QFASY	73	78	6	11	P	3	Adjust quantity per standard									
QFACY	79	84	6	11	P	3	Adjust quantity per current									
QFASY	85	90	6	11	P	3	Adjust quantity per average									
UTD1BK	91	97	7	7	S	0	User field-date 1									
UT40BK	98	137	40		A		User field-text 40									
UTCACBK	138	142	5		A		User field-code A									
UTGABK	143	144	2		A		User field-short alpha A									
UTQ1BK	145	150	6	11	P	3	User field-quantity 1									
UTQ2BK	151	156	6	11	P	3	User field-quantity 2									
UTQ3BK	157	162	6	11	P	3	User field-quantity 3									
UTQ4BK	163	168	6	11	P	3	User field-quantity 4									
UTQ5BK	169	174	6	11	P	3	User field-quantity 5									
UTQ6BK	175	180	6	11	P	3	User field-quantity 6									
UTQ7BK	181	186	6	11	P	3	User field-quantity 7									
UT11BK	187	188	2	3	P	0	User field-short quantity 1									
TOKEN	189	203	15		A		Token used to uniquely identify record									
Keyed Files	Rad Format	Keys	A/D	Key	Select	Field	Rule	Compare	Value	Join from file	Join To file	Join From #	Join To #	Join From Fld	Join To Fld	
AMFLIB7 /PSTRUC	PSTRUC1	*UNIQUE														
		USBR1	A													
		CINBR	A													
		USBR2	A													

When the data base analysis is complete, you review each custom object to determine if it can be recompiled or if further analysis is required. The action for the object will typically be the highest action assigned to one of its referenced objects. Excel provides easy sorting and filtering to make this task quite easy.

### Phase III – Integration

Integration is the process of applying modifications to newer versions of the MAPICS programs as well as recompiling custom programs and logical files over MAPICS files that have changed in the new release. This can be separated in to two different task lists – programs that only need to be recompiled and those that require further analysis to determine the effects of MAPICS field and program changes.

Use filtering in Excel to create a task list that includes only custom program objects requiring compilation (action is '1'). Insert additional columns in the spreadsheet to handle assignments and status to manage your integration effort.

You can then focus your attention on the list of program objects identified as requiring a more detailed analysis of the logic (action is '2'). These include modified MAPICS programs as well as custom programs that reference files that have critical field changes.

As you integrate the MAPICS changes with your custom applications, you will place all new objects in your test environment, which was installed as a part of the initial upgrade to a new release. When you create this environment, you will use the **Trigger Program Definitions** generated by the Upgrade Assistant to attach your custom trigger programs to the appropriate physical files. Following is a sample of this report:

```

S722SS1 V5R2M0 020719          Display File Description          6/03/04 16:06:31      Page 1
File . . . . . : CODATAM
Library . . . . . : AMFLIBT
Type of information . . . . . : *TRG
File attributes . . . . . : *ALL
System . . . . . : *LCL
Processor . . . . . : IBM AS/400 Display File Description Processor

File . : CODATAM      Library . : AMFLIBT      Type of file . : Physical *DATA      Auxiliary Storage Pool ID . : 01

Trigger Description

Trigger name . . . . . : TRG      QSYS_TRIG_AMFLIBT
CODATAM_000001
Trigger library . . . . . : AMFLIBT
Trigger state . . . . . : STATE      *ENABLED
Trigger status . . . . . : *OPERATIVE
Trigger event . . . . . : TRGEVENT *INSERT
Trigger time . . . . . : TRGTIME *BEFORE
Allow repeated change . . . . . : ALWREPCHG *NO
Program Name . . . . . : FGM      AM2TRG3C
Library . . . . . : THDSAFE      AMALIBI
Program is threadsafe . . . . . : *UNKNOWN
Multithreaded job action . . . . . : MLTHDACC *SYSVAL
Trigger type . . . . . : *SYS
Trigger orientation . . . . . : *ROW
Trigger creation date and time . . . . . : 02/05/04 21:23:52
Number of trigger update columns . . . . . : 0
  
```

The time required to complete the integration process should be reduced considerably and accuracy should be improved.

**Phase IV – Testing**

Thorough review and testing by users in the new release environment is essential to the success of your upgrade. Create a test environment for this purpose, or use the environment where integration has taken place. When the users are satisfied with the success of the upgrade, you are ready to go live.

**Phase V – Final Upgrade and Go Live**

Perform final upgrade and migration tasks in the new release environment and provide support for users.



*"With over 30 custom libraries and thousands of custom objects, MAPICS release upgrades took as long as 6 months. With Upgrade Assistant we were able to focus our efforts on affected objects and cut the migration time to just a month –with a cost savings of 75%."*

**Michael Bailey, Blum, Inc.**



*"It has been difficult for our small staff to upgrade MAPICS due to extensive custom programs and reports. With Upgrade Assistant we were able to upgrade to Release 6 in less than a month, using significantly less resources than required by previous upgrades."*

**Donna Filer, AGI**



*"Kason has a considerable investment in custom enhancements and reports that tailor MAPICS to our specific requirements. But these modifications have restricted our ability to take advantage of new MAPICS features. Upgrade Assistant and the CISTECH services team provided a cost-effective solution to identify and update affected objects. I recommend this solution to other MAPICS customers."*

**Roger Sharp, Kason Industries**