

# Doing Uniface Differently

Uniface 6, 7, 8 and 9 with an Eclipse IDE and other things you can do with Uniface Source in Text files

# Agenda

march-hare.com



- ▶ About March Hare Software
- ▶ What is UD6
- ▶ Planning the Eclipse IDE
- ▶ Eclipse IDE - Available Now
- ▶ **Demonstrate Eclipse IDE for Uniface**
- ▶ Not the Eclipse IDE - a customer story
- ▶ Where to from here?

# March Hare Software

march-hare.com



- Started in Sydney Australia in 1996, expanded to UK in 2004 and to New York, USA in 2006. Our UD6 Uniface driver first released in 1999, first sale 2000.
- Product company - focus is on Change Management, Version Control and Quality
- Mixture of Proprietary and Open Source
- Not all customers are programmers/IT
- All products include source code

# About Us

march-hare.com

march-hare.com



Sydney  
London  
New York



# What is UD6?

march-hare.com

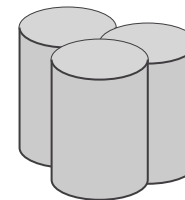
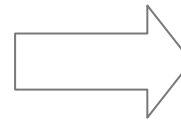
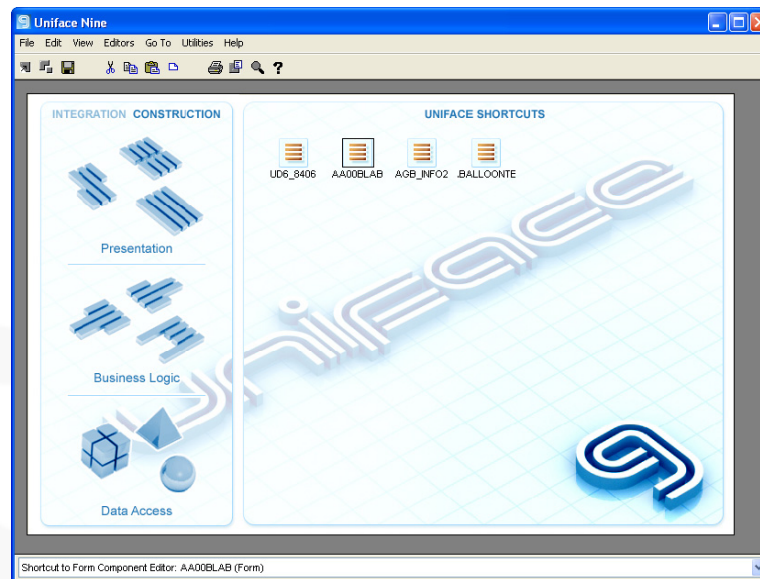


... what is this  
product, and  
why do so many  
Uniface  
customers see  
it as vital?

# Uniface Source DB

march-hare.com

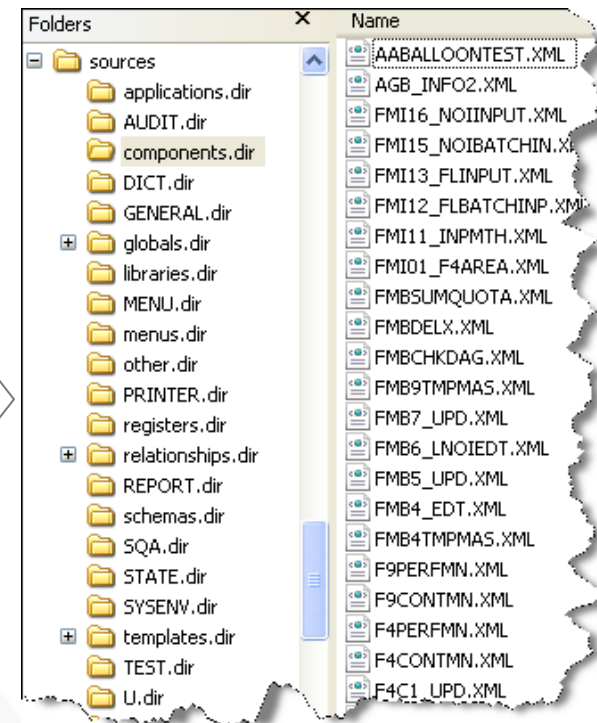
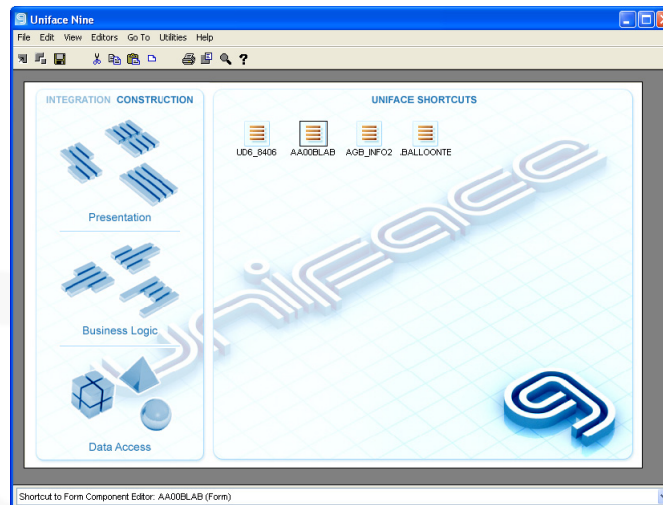
Uniface natively stores its source code as rows in database tables.



# Uniface source in text

march-hare.com

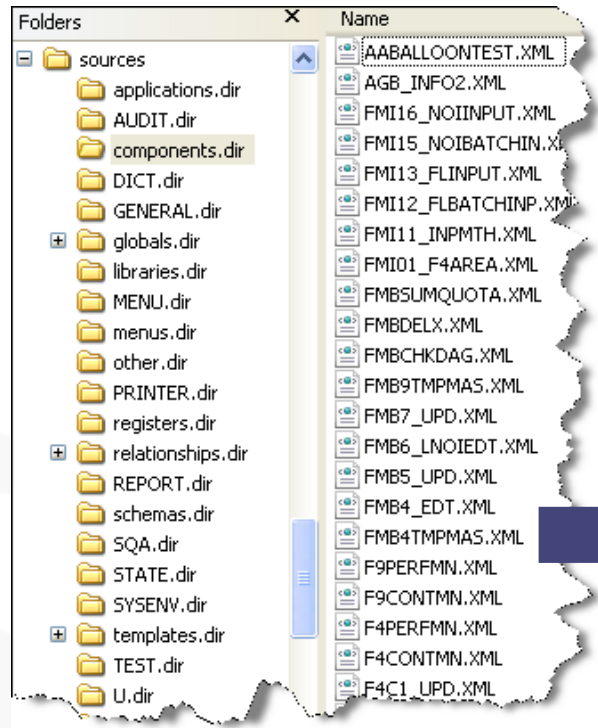
UD6 is a database we sell specifically for Uniface developers that stores Uniface source code in text files.



# Enablement

march-hare.com

When the source code is in text files many other toolchains become accessible:



- ▶ Build (Make, Maven)
- ▶ Version Control (CVS)
- ▶ Automation (Jenkins)
- ▶ Release
- ▶ Quality Control (Sonar)
- ▶ Agile Development

# Work Sandboxed

march-hare.com

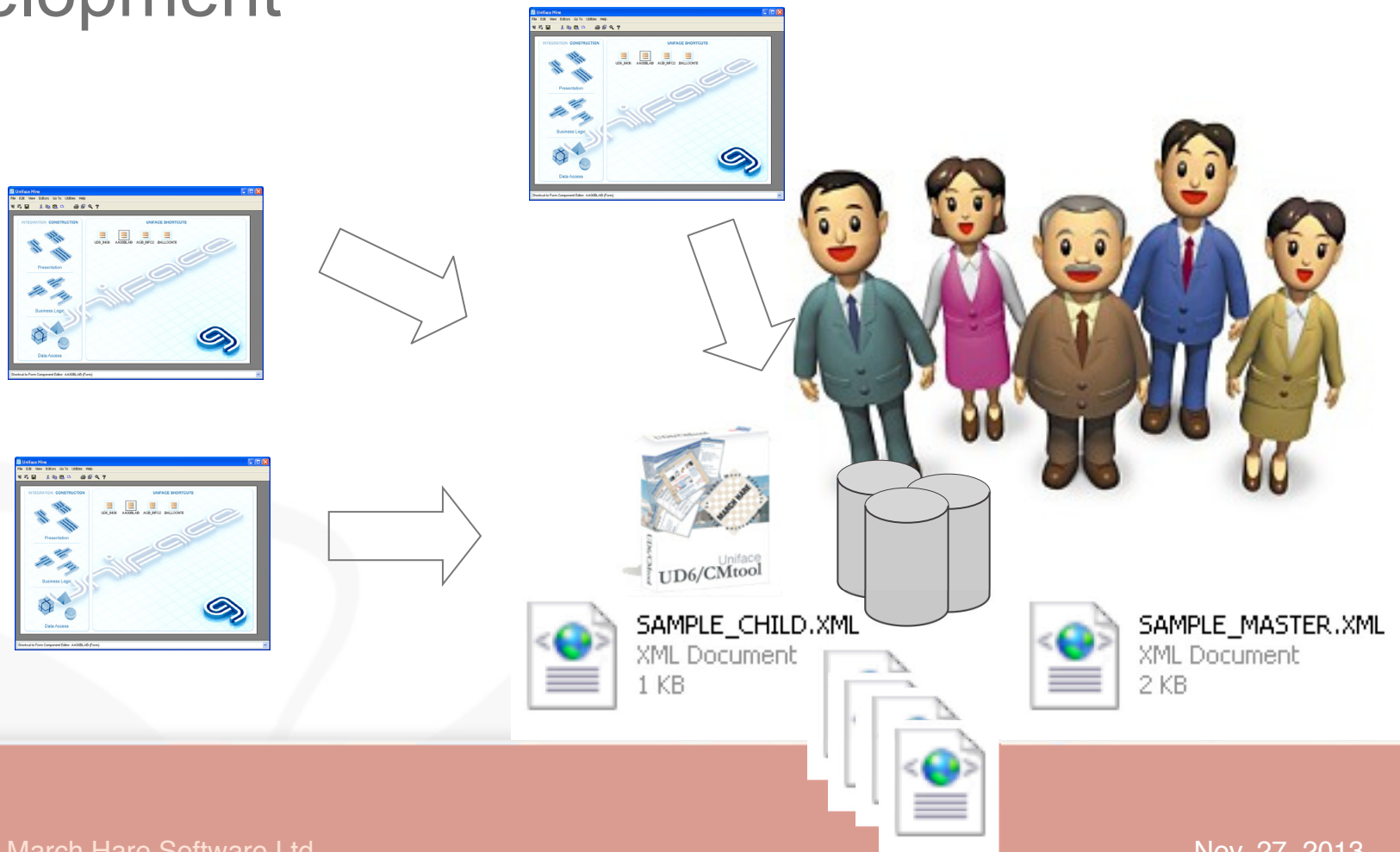
You can do Agile development working in a sandboxed environment



# Share your work

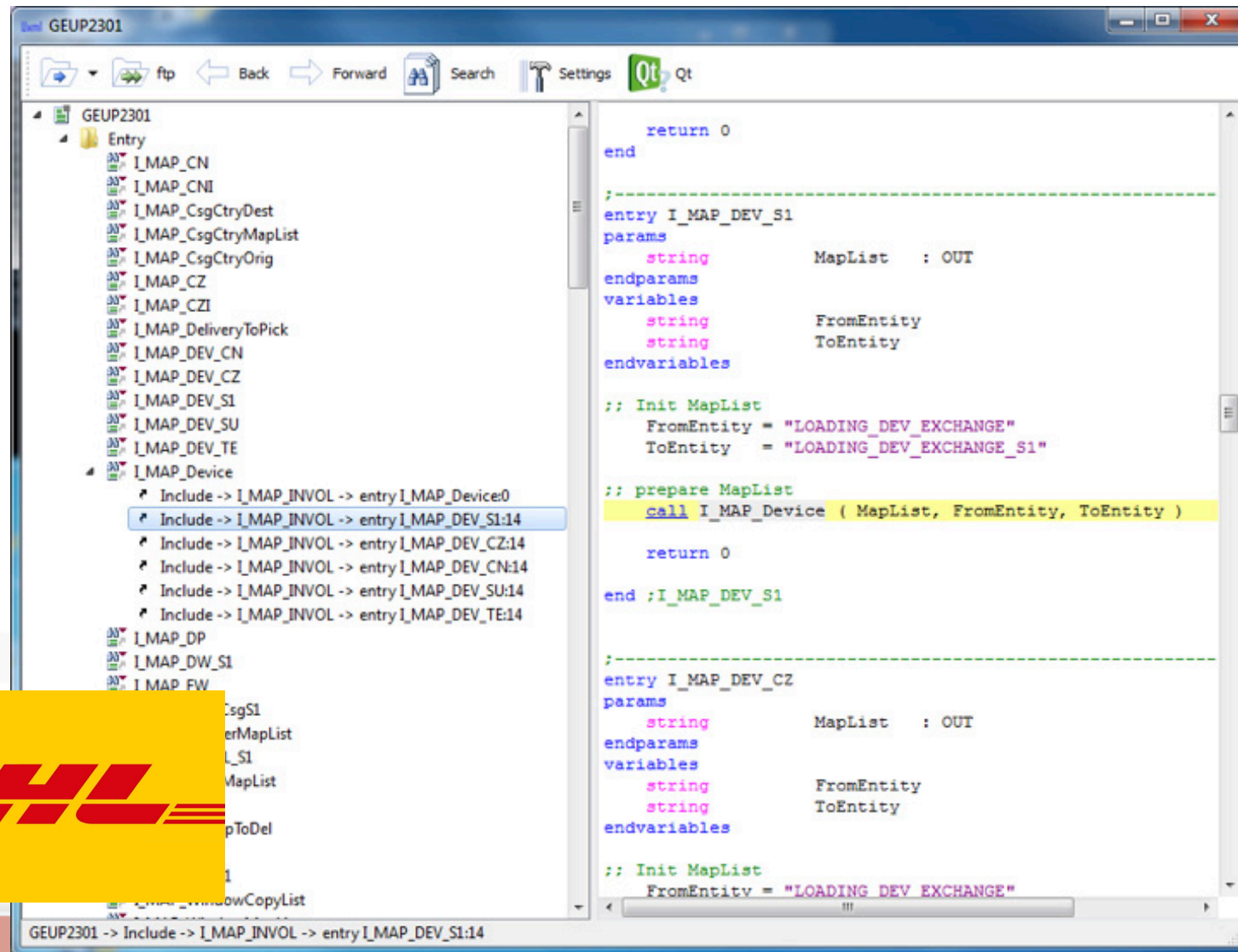
march-hare.com

You can do traditional Uniface team development



# DHL: Editor Analyser

march-hare.com



# Carphone: Analyser

march-hare.com

## Component Breakdown

Description	Count
Procedures	28
Operations	2
Variables	10
Entities	14

### Fields

V\_OBP\_STAGES\_HNT.PIE

OBPTRANS.PIE

BIN\_LOC QTY D1.PIE (Non-DB)

### Include proc references

### Global message references

### Local proc calls

### Global proc calls

TRANSACTION.PIE

TPRODLINE.PIE

PART.PIE

PRODCOM.PIE

IMLOCQTY.IMS

IMITEM.IMS

IMMATAT.IMS

TCOMPLINE.PIE

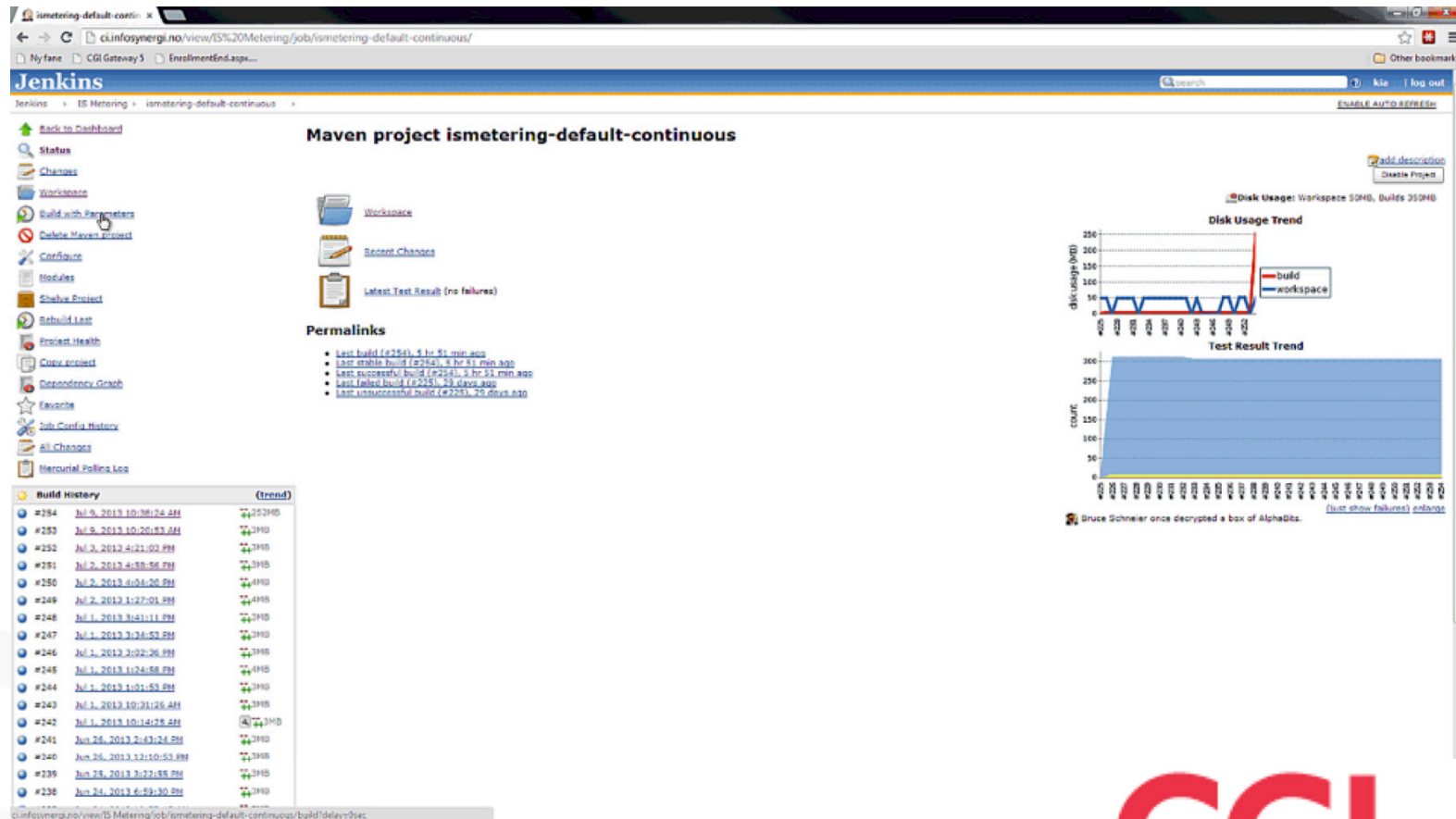
PRODUCT.PIE

# Carphone Warehouse

TRANSACTION BIN\_LOC QTY PART DESCR SKU D2.PIE (Non-DB)

# CGI: CI with build

march-hare.com



**CGI**  
Logica is now part of CGI.

# Why another IDE?

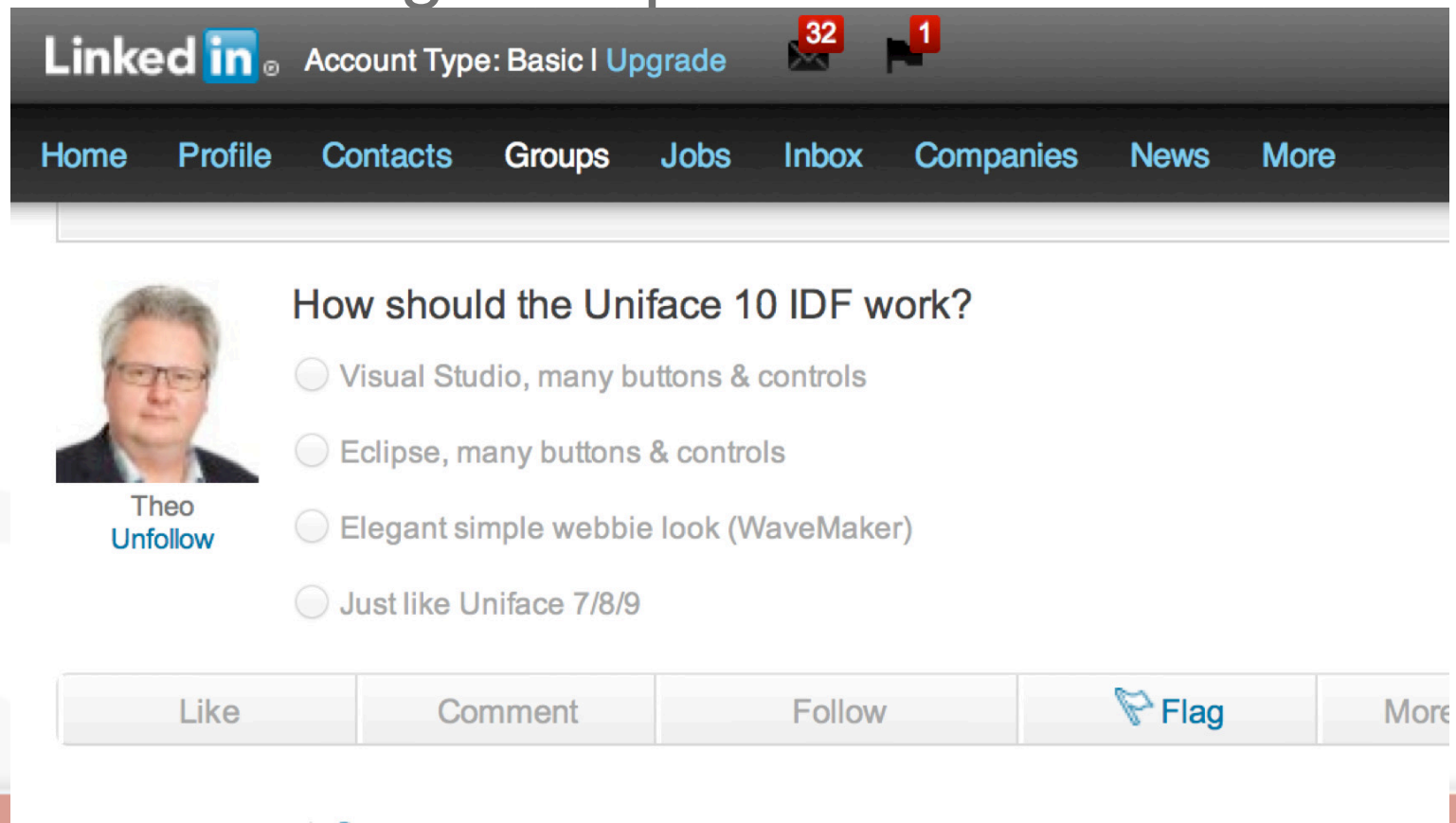
march-hare.com



# Why another IDE?

march-hare.com


Compuware are actively collaborating with customers looking to improve the IDF.



The screenshot shows a LinkedIn interface. At the top, the LinkedIn logo is followed by 'Account Type: Basic | Upgrade'. To the right are notification icons for messages (32) and a profile picture (1). Below this is a navigation bar with links: Home, Profile, Contacts, Groups, Jobs, Inbox, Companies, News, and More. The main content area features a post by 'Theo Unfollow' with a profile picture. The post title is 'How should the Uniface 10 IDF work?'. It contains four radio button options: 'Visual Studio, many buttons & controls', 'Eclipse, many buttons & controls', 'Elegant simple webbie look (WaveMaker)', and 'Just like Uniface 7/8/9'. At the bottom of the post are buttons for 'Like', 'Comment', 'Follow', 'Flag', and 'More'.

Linked in Account Type: Basic | Upgrade 32 1

Home Profile Contacts Groups Jobs Inbox Companies News More

 Theo Unfollow

How should the Uniface 10 IDF work?

- ☐ Visual Studio, many buttons & controls
- ☐ Eclipse, many buttons & controls
- ☐ Elegant simple webbie look (WaveMaker)
- ☐ Just like Uniface 7/8/9

Like Comment Follow Flag More

# Why ~~another~~ IDE?

march-hare.com



# ALTERNATIVE

choice is a good thing.

# Why an alternative IDE?

march-hare.com



The existing or a new IDE may not be ideal:

- most of your team use a 'standard' editor
- when many technologies are in use the rates of error are higher when switching editors
- you rely on workflow embedded into the editing environment, e.g.: MyLyn, Agile
- an editor that is customizable through open source has particular advantages to your team.
- develop using Linux, Mac OS X, HP-UX etc.
- you need to improve productivity without a Uniface upgrade.

# Not looking like IDF

march-hare.com

Inheritance look and feel is standardised

Define Entity: SAMPLE

Define Component Entity Properties: SAMPLE\_CHILD

Description: child entity

Widget Type: None

Pop-up Menu:

Border: ☐

Number of Occurrences: Minimum: , Maximum:

Field List: Automatic

Locking: Optimistic

Data Access:

Description	child entity
Locking	Optimistic
DBMS	DEF
EntityAbbreviation	SAMPLE_CHILD
OccurrenceInterfaceName	SAMPLE_CHILD_OCC
CollectionInterfaceName	SAMPLE_CHILD_COLL
BusinessObject	Yes
Comments	this is override
FormWidget	
DynamicServerPageWidget	
Border	
MinimumOcc	
MaximumOcc	

Form|SAMPLE\_CHILD Form|SAMPLE\_MASTER +

Ideas & Concepts

# Language helpers

march-hare.com

The Eclipse Java IDE has language helpers for Java – we can adapt it to

```
aaa="test";
Integer aal = aaa.le

// The server may
if ( ! session.isV
    IStatus status

retrieve/o
if ($statu
    if ($sta
    if ($sta
    if ($sta
    if ($sta
    if ($sta
    if ($sta
else
    if ($sta
    if ($sta
        retrie
    if ($s
endif
if ($sta
```

**length**

length() : int - String

**retrieve/o**

retrieve/o {Entity}

Attempt to locate an occurrence of an entity using the current primary key value.

**Parameters:**

Entity—entity where an occurrence is to be

Table 1. Values returned by

Value	Meaning
4	The occurrence was found in the con

Press 'Ctrl+Space' to show Template Proposals

Press 'Tab' from proposal table or click for focus

# Display code not XML

march-hare.com



Unified and easy to ready navigate source.

```
- <tplactual>
- <html:pre>
  <trigger name="Comments">for Eclipse proof-of-concept.</trigger>
  <trigger name="READ">read</trigger>
  <trigger name="WRIT">write</trigger>
  <trigger name="DELE">delete</trigger>
  <trigger name="LOCK">lock if ($status = -10)
  <trigger name="LMK">retrieve/o if ($status <
    $text(2205) ; multiple hits: not in foreign
    $text(2006) ; duplicate key if ($status = -
    I/O error if ($status = -2) message $text
    entity w/ WRITE UP if ($status = 2) ; one c
    endif if ($status = 3) message $text(220:
    endif return ($status)</trigger>
  <trigger name="VLDK">findkey $entname, $c
    only if Write Up trigger not filled endif cas
    found in DBMS if (!$foreign) ; duplicate ke
```

<Help>

askmess "you can get helponline", "ok"

Validate Key

findkey \$entname, \$curkey

selectcase \$status

```
case 0          ; key not found
  if ($foreign) ; non existing key in up entity
    return (-1) ; only if Write Up trigger not filled
  endif
```

```
case 1          ; key found in Component
  if (!$foreign) ; duplicate key in down entity
    return (-1)
```

Ideas & Concepts

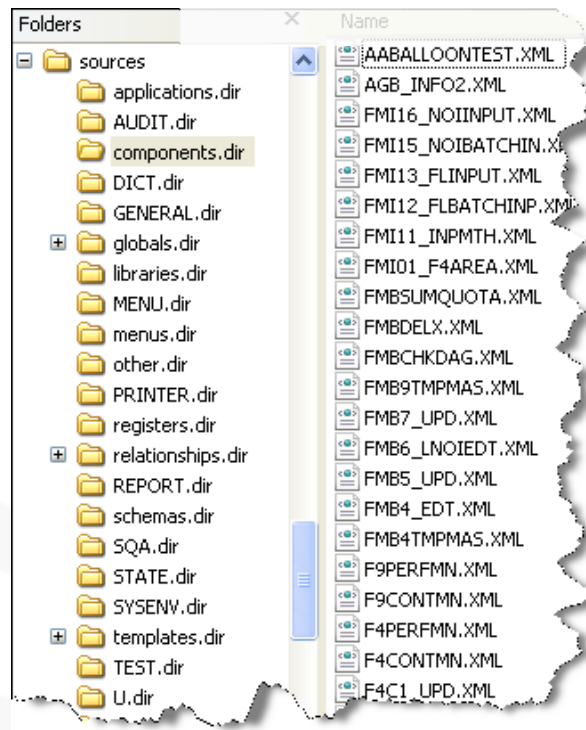


# load XML

march-hare.com



Load the XML from text files



# Format Triggers

march-hare.com



Display the XML as *source code*

```
<Help>
  askmess "you can get helponline","ok"
```

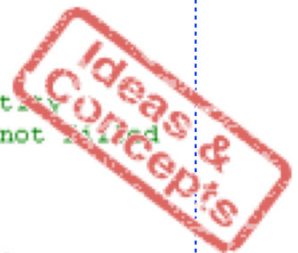
Override

```
Validate Key
  findkey $entname, $curkey

  selectcase $status
    case 0
      if {$foreign}
        return {-1}
      endif
      ; key not found
      ; non existing key in up entity
      ; only if Write Up trigger not failed

    case 1
      if (!$foreign)
        return {-1}
      endif
      ; key found in Component
      ; duplicate key in down entity
```

Inherited



# Format Properties

march-hare.com



Display the XML as *declarative code*

Description	child entity
Locking	Optimistic
DBMS	DEF
EntityAbbreviation	SAMPLE_CHILD
OccurrenceInterfaceName	SAMPLE_CHILD_OCC
CollectionInterfaceName	SAMPLE_CHILD_COLL
BusinessObject	Yes
Comments	this is override
FormWidget	
DynamicServerPageWidget	
Border	
MinimumOcc	
MaximumOcc	

Form|SAMPLE\_CHILD    Form|SAMPLE\_MASTER    +

*Inherited* (points to EntityAbbreviation through OccurrenceInterfaceName and CollectionInterfaceName)

*Override* (points to Locking and DBMS)

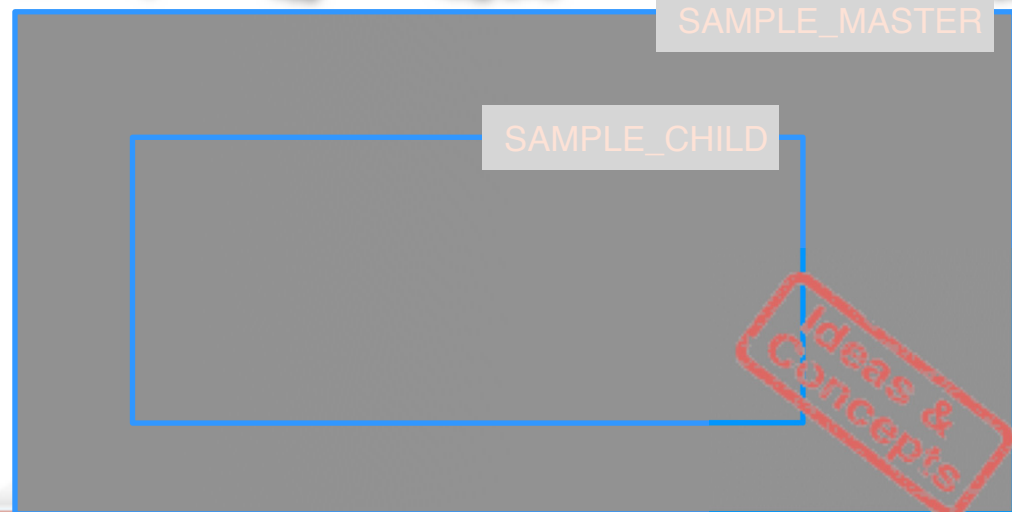
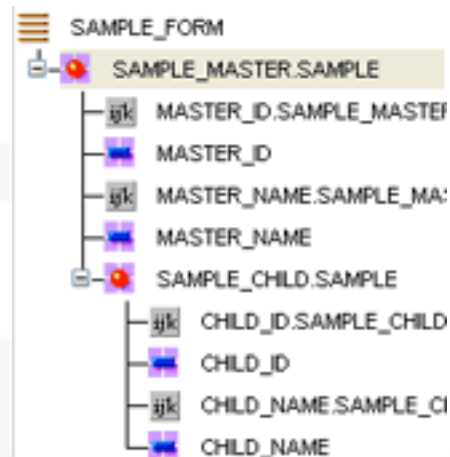
*Ideas & Concepts* (stamp)

# Diagramming (not done)

march-hare.com

Display the structure in some diagram

```
<screenitem frame-type="E" label="SAMPLE_MASTER.SAMPLE" line-number="1" column-number="3"
  repetition="1" scroll-bar="Y" />
<screenitem frame-type="L" label="MASTER_ID.SAMPLE_MASTER" line-number="1" column-number="18" width="9" height="1" />
<screenitem frame-type="F" label="MASTER_ID" line-number="1" column-number="18" width="9" height="1" />
<screenitem frame-type="L" label="MASTER_NAME.SAMPLE_MASTER" line-number="2" column-number="18" width="9" height="1" />
<screenitem frame-type="F" label="MASTER_NAME" line-number="2" column-number="18" width="9" height="1" />
<screenitem frame-type="E" label="SAMPLE_CHILD.SAMPLE" line-number="4" column-number="7"
  repetition="1" scroll-bar="Y" />
<screenitem frame-type="L" label="CHILD_ID.SAMPLE_CHILD" line-number="4" column-number="18" width="9" height="1" />
```



# write XML

march-hare.com



XML is usually position agnostic, but UD6 source cannot be.



SAMPLE\_FORM.XML  
XML Document  
14 KB



# compile

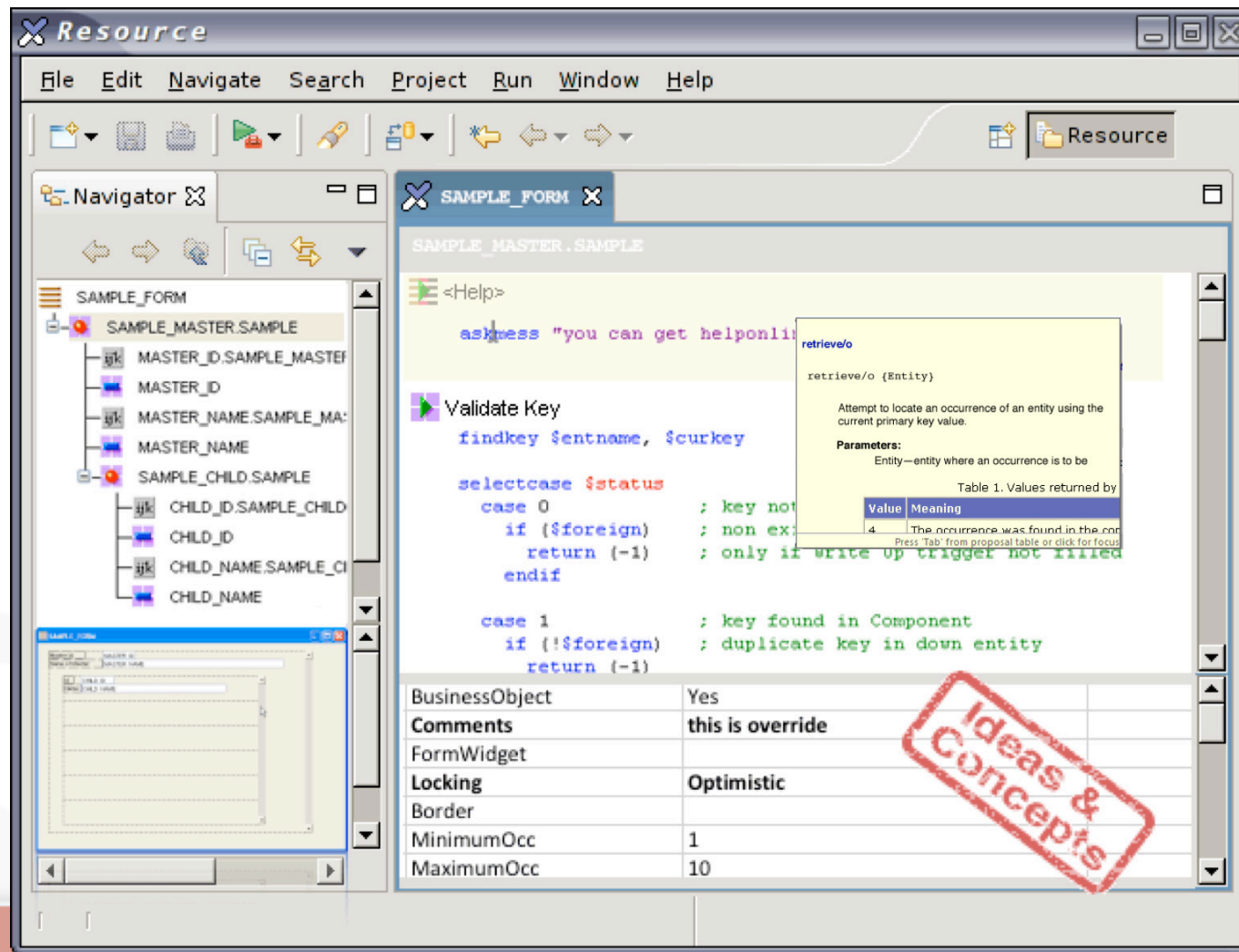
march-hare.com

The Eclipse IDE has no knowledge of how to compile Uniface components, so call the Uniface IDE to compile (just like java/c++).



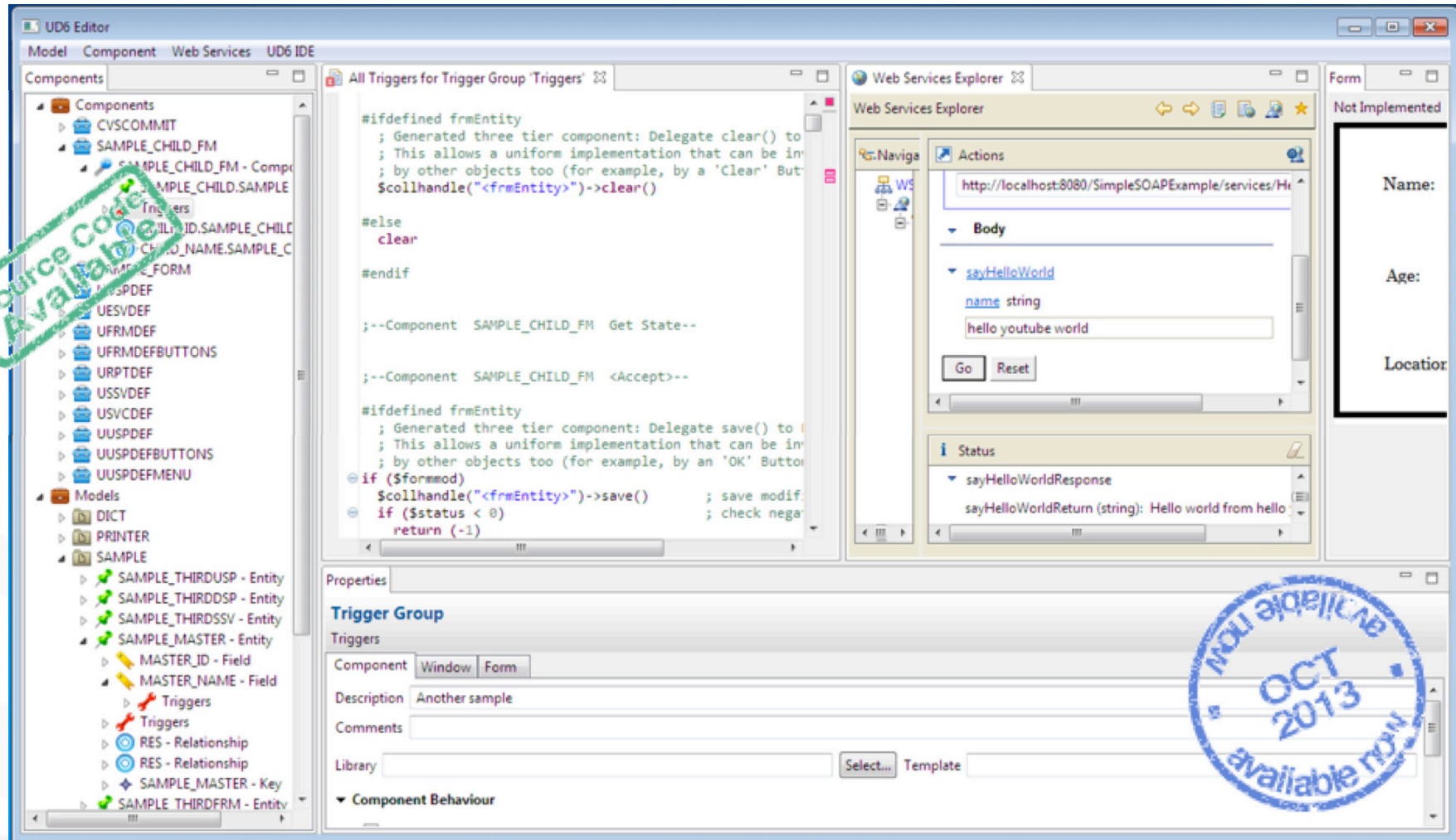
# Mockup - Vaporware

march-hare.com



# Available Now

march-hare.com



# Smart Navigation

march-hare.com



## Procs, Variables in Tree

The screenshot displays a software development environment with two main panels. The left panel, titled 'Component', shows a tree structure for 'SAMPLE\_FORM'. Under 'Triggers', there is a list of events like '<Clear>', 'Get State', '<Accept>', 'Defines', 'Form gets focus', '<Retrieve>', 'Asynchronous Interrupt', '<Retrieve Sequential>', '<Print>', and 'Local Proc Modules'. Under 'Local Proc Modules', there are two entries: 'first\_ploc' and 'third\_proc'. A green stamp with the text 'Source Code Available' is overlaid on the bottom left of the tree panel. The right panel, titled 'SAMPLE\_FORM.XML - Component 'Local Proc Modules'', shows the code for these procedures. The code for 'first\_ploc' is:

```
entry first_ploc
askmess "are you sure" , "ok"
end
```

The code for 'third\_proc' is:

```
entry third_proc
askmess "oh no" , "ok"
call first_ploc
end
```

The 'call first\_ploc' line in the 'third\_proc' entry is highlighted, and a tooltip message says 'Enter new name, press Enter to refactor'. Below the code, there is another entry for 'second\_proc'.

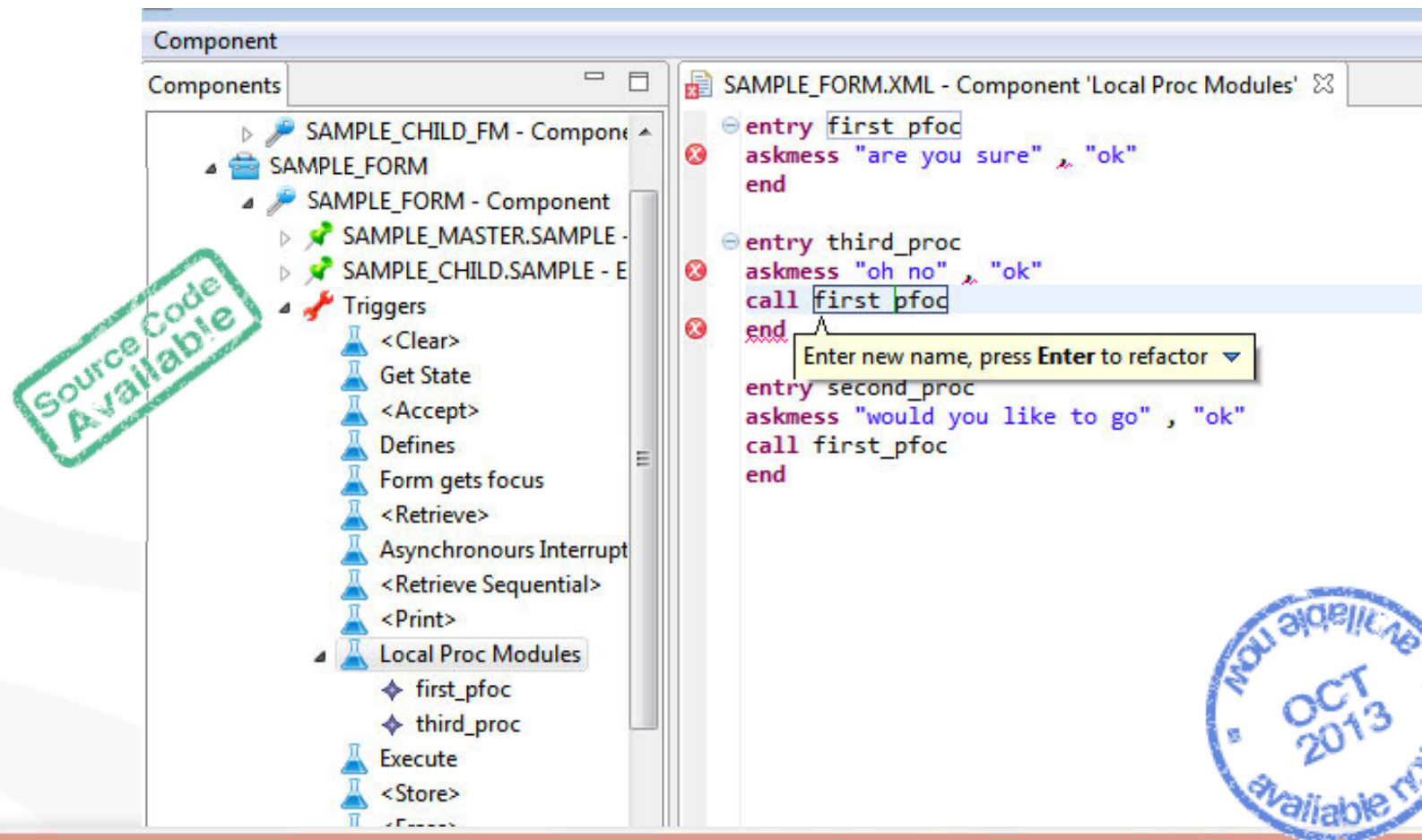
```
entry second_proc
askmess "would you like to go" , "ok"
call first_ploc
end
```

A blue circular stamp with the text 'available now' and 'OCT 2013' is overlaid on the bottom right of the code panel.

# Refactor - xtext

march-hare.com

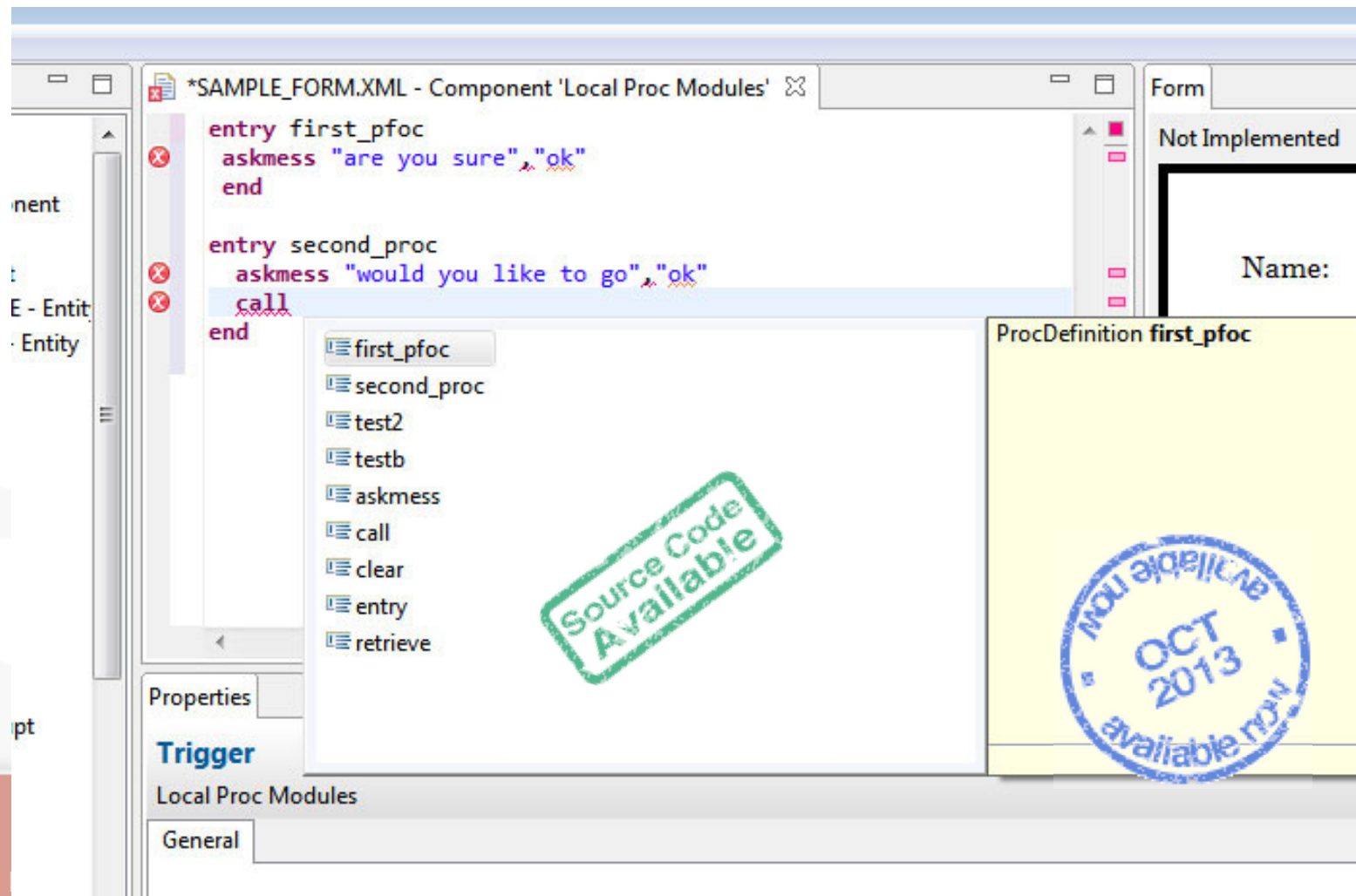
## Refactor Alt-Shift-R



# Auto-complete - xtext

march-hare.com

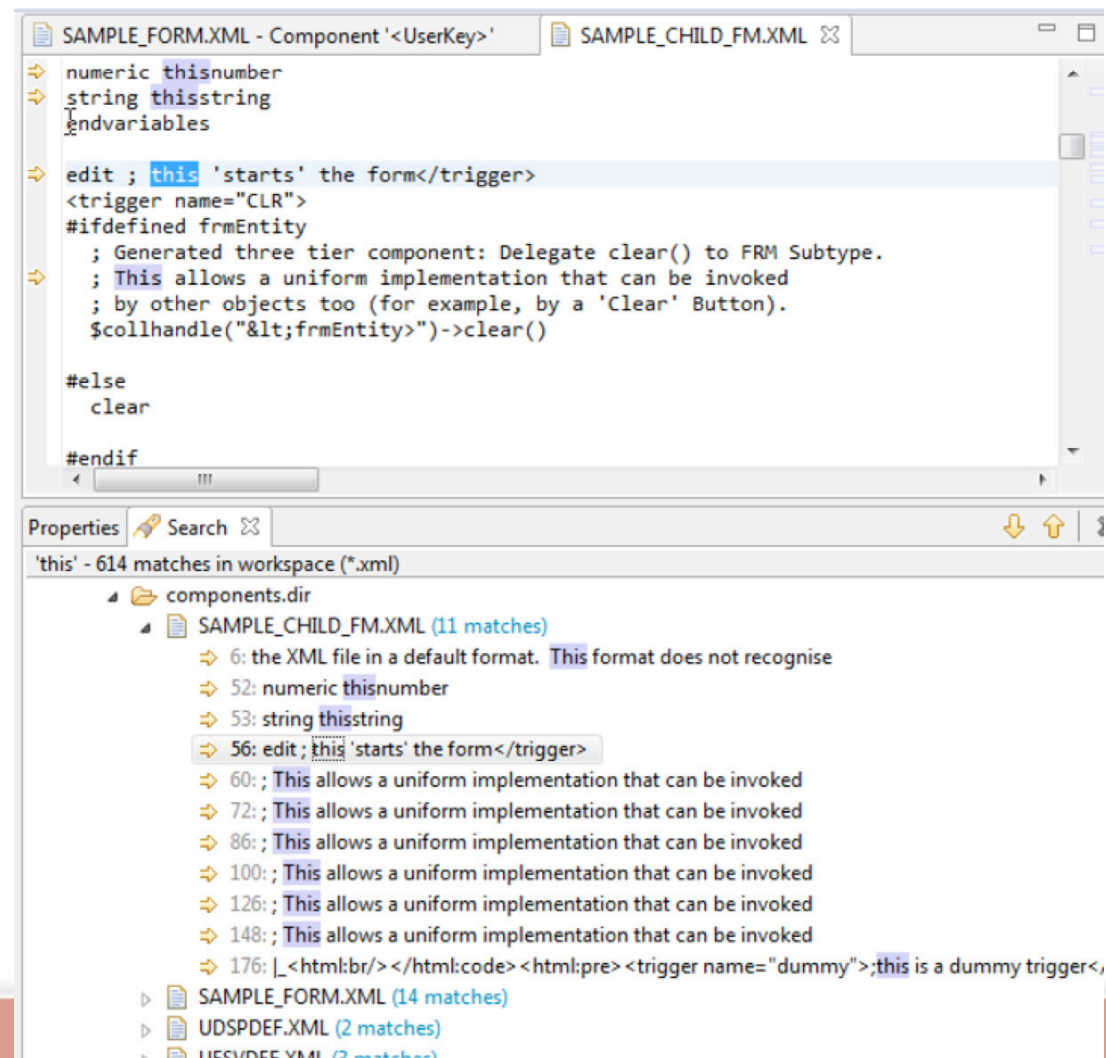
## Declaration Ctrl-Space



# Find

## Search Ctrl-H

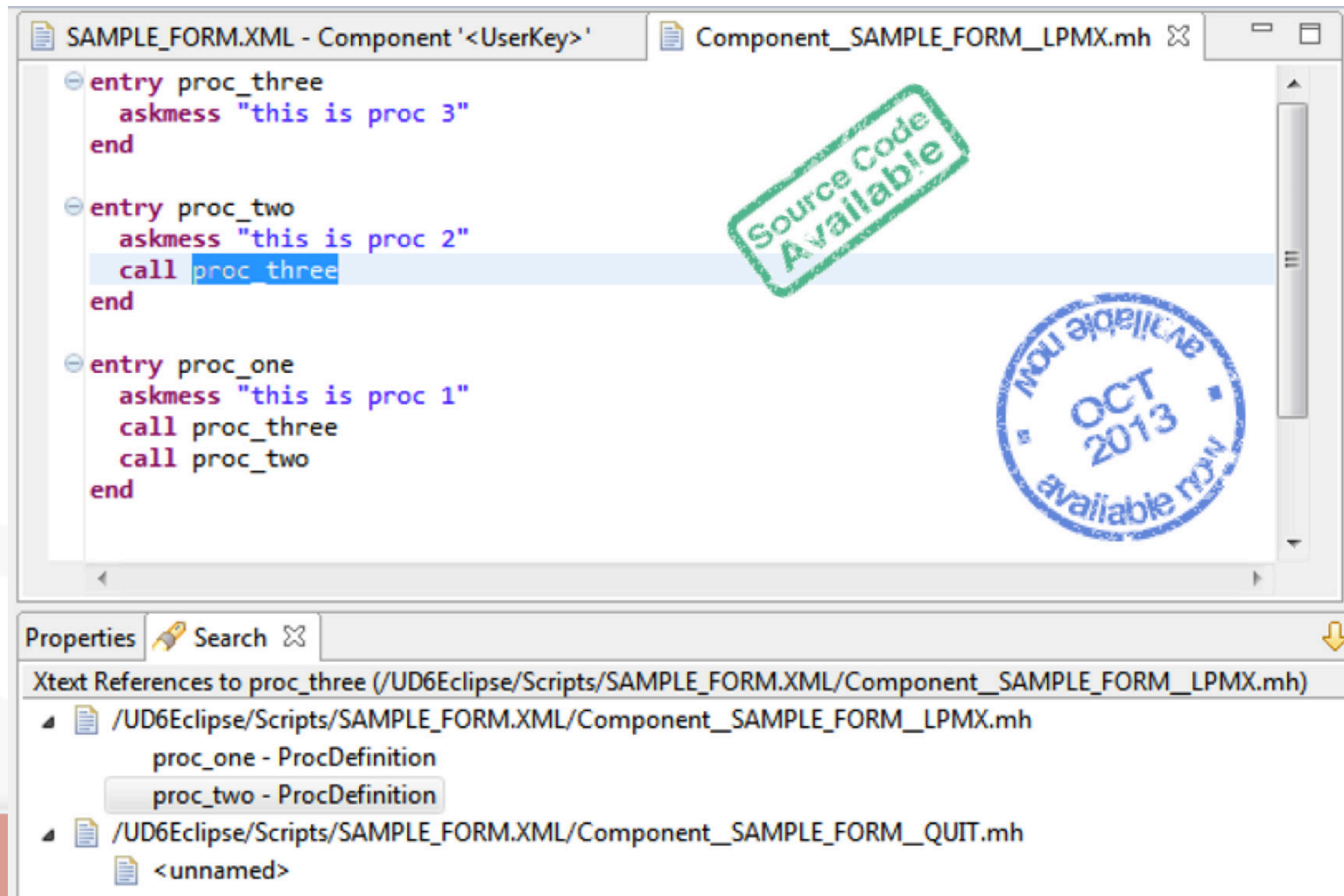
march-hare.com



# Find references

march-hare.com

Search Ctrl-Shift-G



# Multi-Trigger editor

march-hare.com



Does not require new functionality in IDF

```
All Triggers for Trigger Group 'Triggers'
Component Trigger SAMPLE_FORM <Retrieve Sequential>

#ifdef frmEntity
; Generated three tier component: Delegate load() to FRM Subtype.
; This allows a uniform implementation that can be invoked
; by other objects too (for example, by a 'Load' Button).
$collhandle("<frmEntity>")->load()
#else
retrieve
if ($status < 0)
message $text(1762) ;error
endif
#endif

Trigger SAMPLE_FORM <Print>
<< EMPTY >>

Component Trigger SAMPLE_FORM Local Proc Modules

entry proc_three
askmess "this is proc 3"
end

entry proc_two
askmess "this is proc 2"
call proc_three
end

entry proc_one
askmess "this is proc 1"
call proc_three
call proc_two
end

Component Trigger SAMPLE_FORM Execute

variables
numeric thisnumber
string thisstring
endvariables

edit ; this 'starts' the form

Component Trigger SAMPLE_FORM <Store>
```



# Trigger Inheritance

march-hare.com

## Inheritance of triggers and external variations

- ▲ SAMPLE\_CHILD\_FM
  - ▲ SAMPLE\_CHILD\_FM - Component
    - ▲ SAMPLE\_CHILD.SAMPLE - Entity
      - ▶ CHILD\_ID - Field
      - ▶ CHILD\_NAME - Field
      - ▲ Triggers
        - <Add/Insert Occurrence>
        - On error
        - Occurrence gets focus
        - Leave Printed Occurrence
        - <Remove Occurrence>
        - Local Proc Modules
        - <Detail>
        - Defines
        - Leave Modified Key
        - <Help>
        - Lock
        - Occurrence operations
        - Leave Modified Occurrence
        - Post save occurrence
        - Write
        - Delete
        - Read

```
--Entity SAMPLE_CHILD Leave Modified Occurrence--  
  
--Entity SAMPLE_CHILD Post save occurrence--  
  
--Entity SAMPLE_CHILD Write--  
write ; global write trigger  
  
--Entity SAMPLE_CHILD Delete--  
delete  
  
--Entity SAMPLE_CHILD Read--  
read ; global read trigger  
  
--Entity SAMPLE_CHILD Write up--  
  
--Entity SAMPLE_CHILD Post load occurrence--  
  
--Entity SAMPLE_CHILD Pre save occurrence--
```

Source Code  
Available



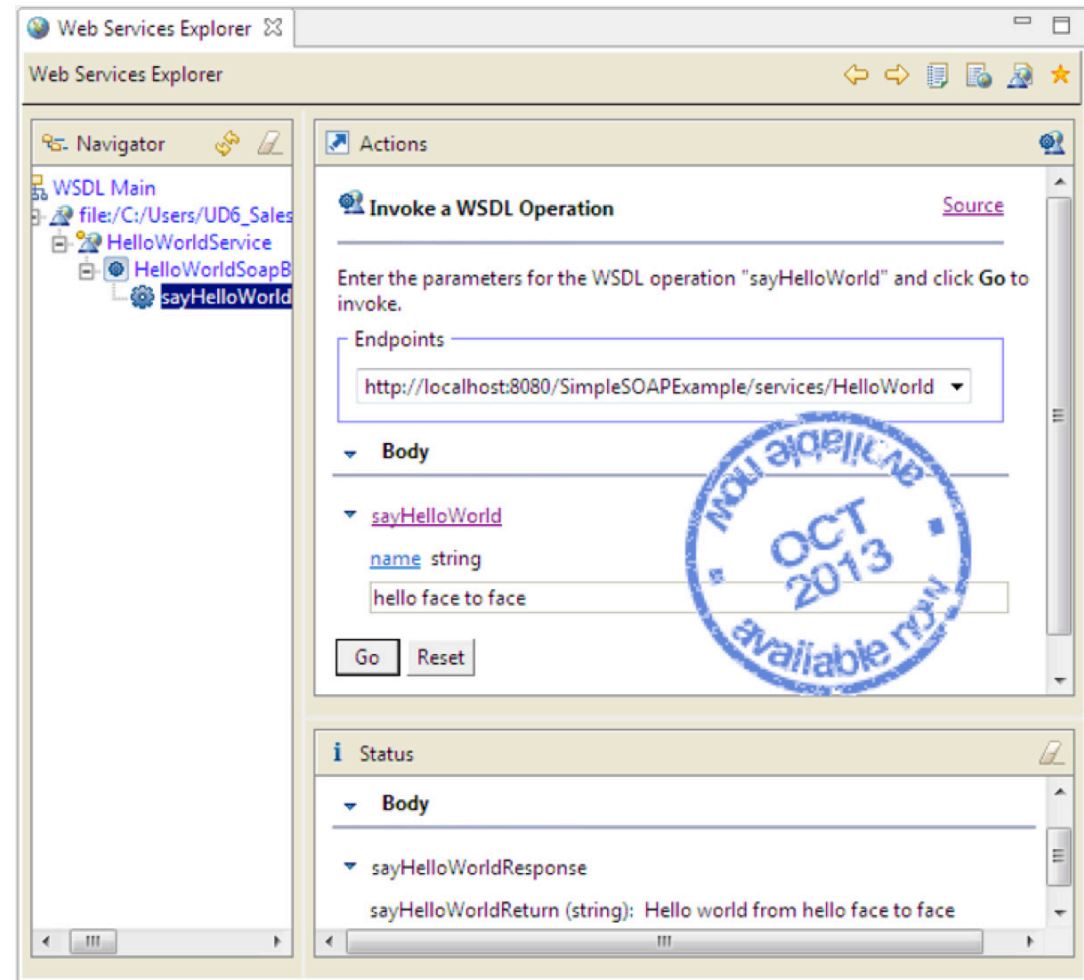
# Web Services Explorer

march-hare.com



Quickly test and  
verify web  
services

Source Code  
Available



# All standard shortcuts

Multiple Undo levels: Ctrl-Z

Cut: Ctrl-X

Copy: Ctrl-C

Paste: Ctrl-V

etc.

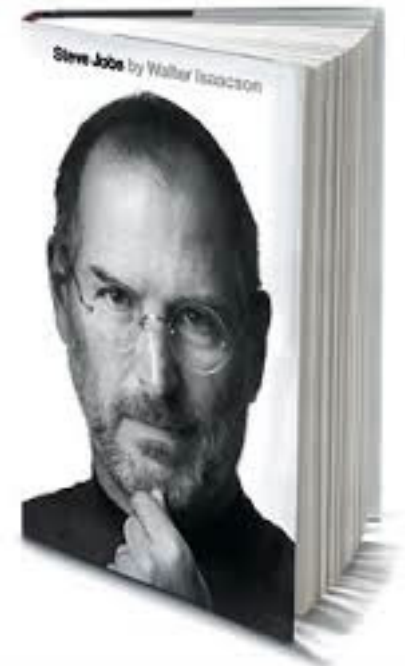
etc.

march-hare.com





“Innovation has nothing to do with how many R&D dollars you have. When Apple came up with the Mac, IBM was spending at least 100 times more on R&D. It’s not about money. It’s about the people you have, how you’re led, and how much you get it.”



Steve Jobs

# Why Eclipse?

march-hare.com



If there is a reason to have another IDE:

- Leverage the work of thousands of other developers and the skills of millions
- Don't need to 'guess' how developers most like to work and what features they really find useful in an IDE - we're using crowdsourced data from a successful IDE
- Can be open to customer customization, and customer directed feature development
- Improve efficiency in teams which are already or will need to be multi-skilled by making it easier to train other programmers in using Uniface tools and development processes.



march-hare.com

# DEMO

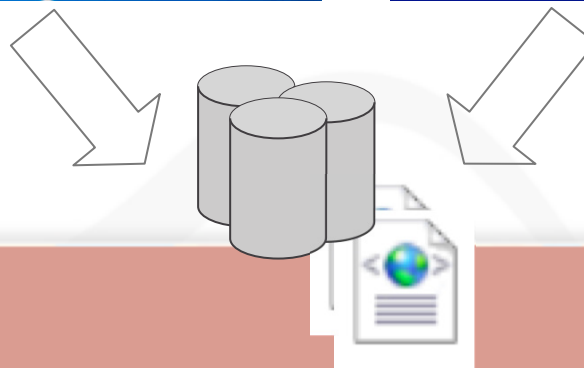
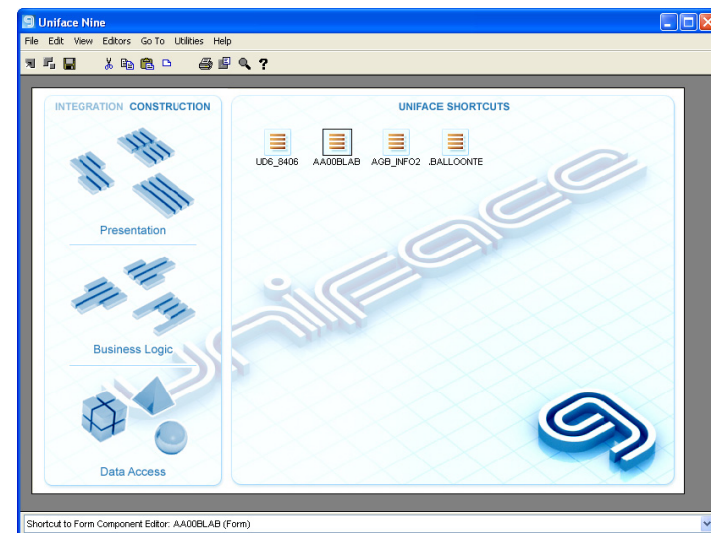
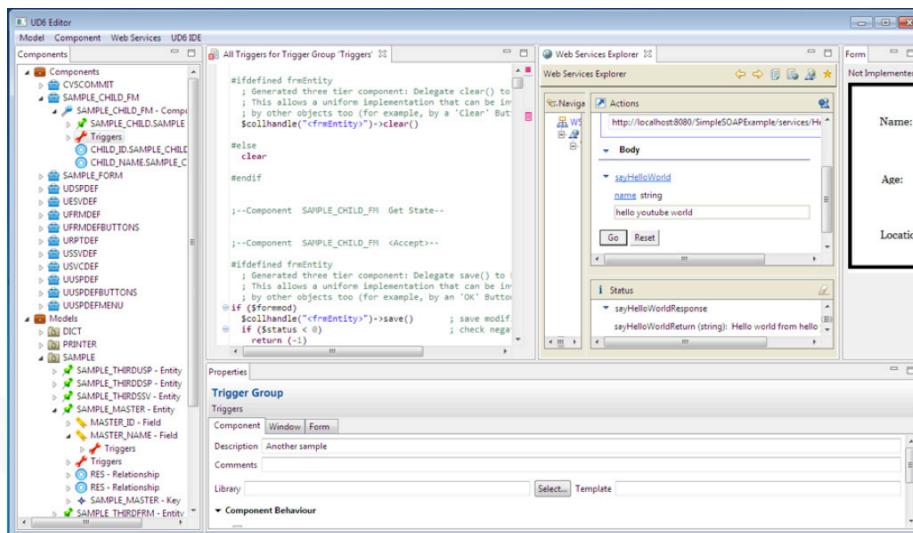
approx. 519 hours

*Didn't attend the conference?  
See a video of the demo online at:  
<http://theu.info/>*

# IDF and Eclipse

march-hare.com

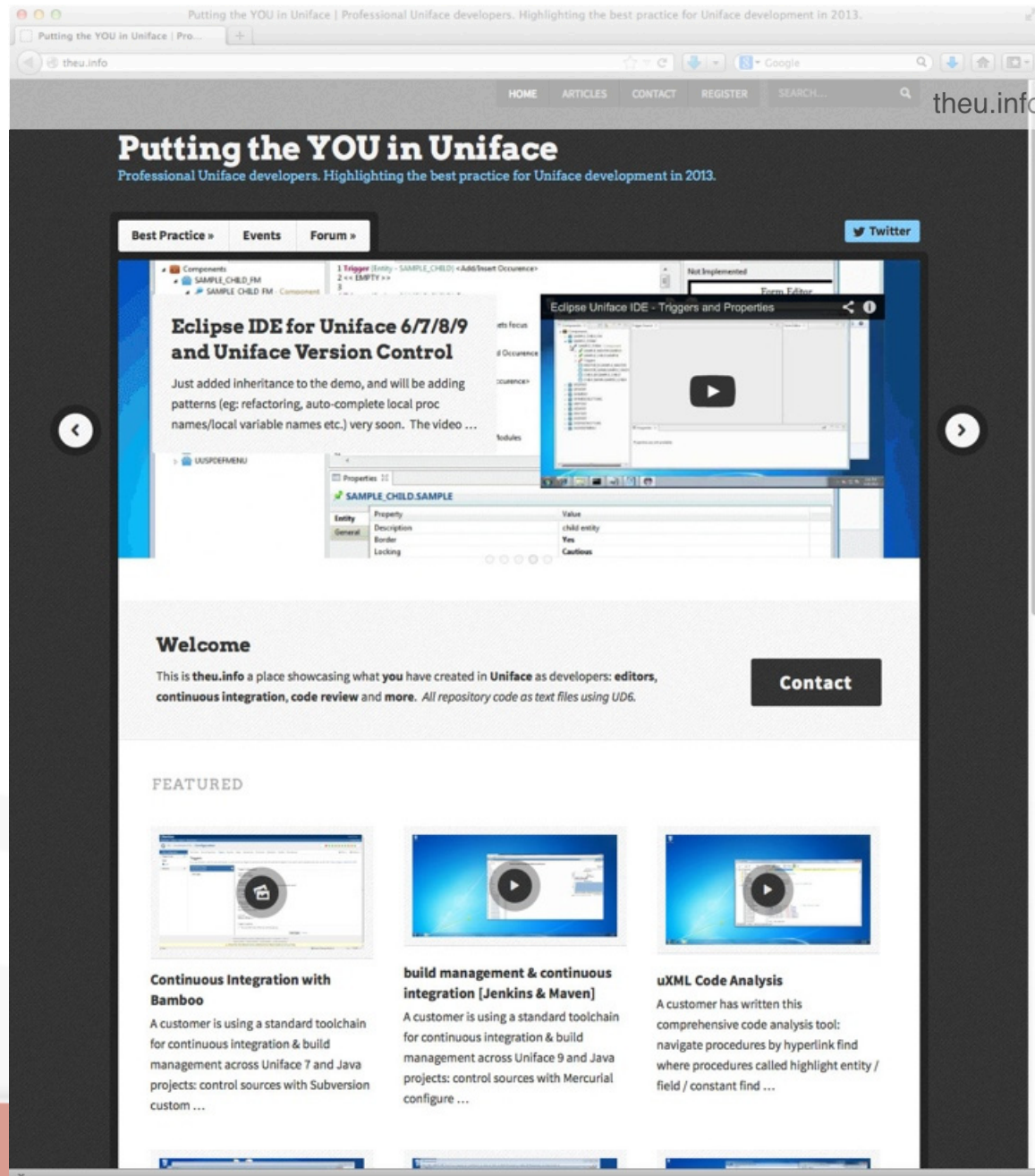
Your team can use a mix of both the IDF and the Eclipse IDE at the same time.



march-hare.com



New web  
site to show  
customer  
stories - real  
developers  
using  
Uniface in  
the real  
world




# UD6IDE Open Source

march-hare.com

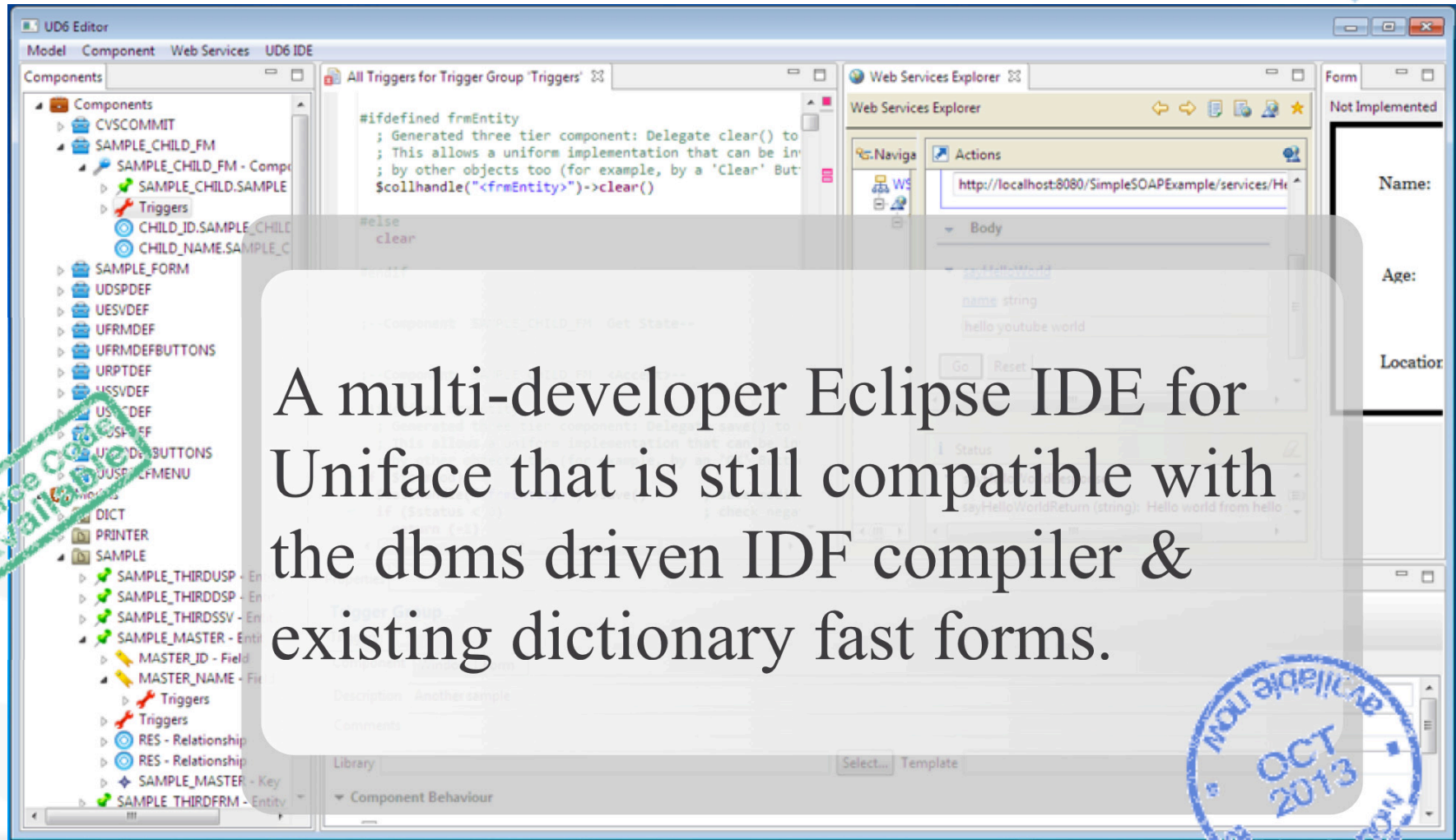


Planned phases are:

- Initial Proof-of-concept
- XText Widget and Multi-Trigger Editor
- Model editor, model wizards, Web Services explorer
- **Provide Source code and Contributor process Usable TODAY** *(primarily for contributors)* **■ we are here** 
- Language definitions, more properties, more patterns
- Add new component, change detection, local reg., ...
- Formpic diagramming & 'all properties' window
- June 2014 cut-off for community code contributions
- Stable release some time after June 2014

# Eclipse IDE for Uniface

march-hare.com



A multi-developer Eclipse IDE for Uniface that is still compatible with the dbms driven IDF compiler & existing dictionary fast forms.

Source Code Available

Available Now  
OCT 2013  
Available Now

# Thank You

## & Questions

