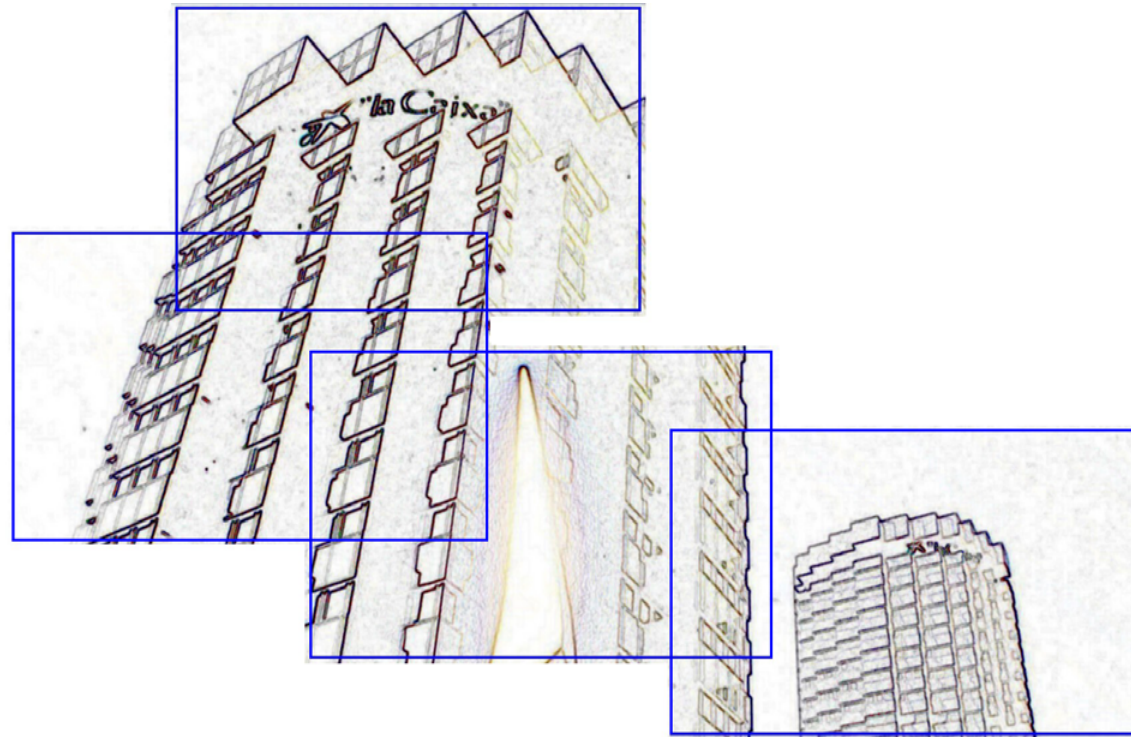


Repository Based Application Development Environment for Banking Systems



Ferran Rodenas
IT Enterprise Architecture Department

Agenda

- La Caixa at a glance
- IT Highlights
- Open Source Adoption
- Open Source Engagement
- Application Development Tools
- The ABSIS Project
- IDEA
- IDEA Workbench
- IDEA Architecture
- ABSIS Architecture Logical View
- IDEA Tools
- Financial Teller Workbench

La Caixa at a glance

- The leading European savings bank and the third largest Spanish financial group: EUR 260,827 million assets, 414,507 million business volume, 2,052 million recurring income
- The activity of the "la Caixa" Group is focused on a model of universal banking based on the strategy of multi-channel operations that enables it to efficiently combine the use of cutting-edge technologies and qualifications of the employees to provide the best and most complete service to the greatest number of clients
- Strong social commitment and a vocation to work in favour of the general interest, both through its financial activity and its welfare projects, which finance and maintain activities of a social, cultural and scientific nature: EUR 465 million, of which 297 million were devoted to attending to social needs
- 10,7 millions customers, 5,530 branches and 27,818 employees
- The most extensive ATM network in the Spanish financial system: 8,113 ATM and 10,3 millions bankcards issued
- Leader in on-line banking services: 5,5 millions internet banking customers and 1,500 million transactions processed yearly



(*) Information as January 30, 2009
http://press.lacaixa.es/view_object.html?obj=659.c.4728

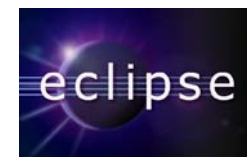
IT Highlights

- More than 450 internal staff members
 - Managing 1,500 external professionals
 - Developing > 500 projects / year
 - Average development time < 6 months
- Mainframe-centric installation:
 - 2,000 trx/sec (peak) with a response time < 1 sec
 - 60,000 batch jobs processed daily
 - 145 PL/I MLOC (growth: 10 PL/I MLOC / year)
- Significant growth of Distributed systems
 - 2.200 servers (900 virtualized)
 - 30 Java MLOC
- Monthly transactions processed (in millions):
 - Branches: 446 (31,77%)
 - ATM: 136 (9,69%)
 - Online Banking: 521 (37,11%)
 - Back-office: 265 (18,87%)
 - Others: 36 (2,56%)

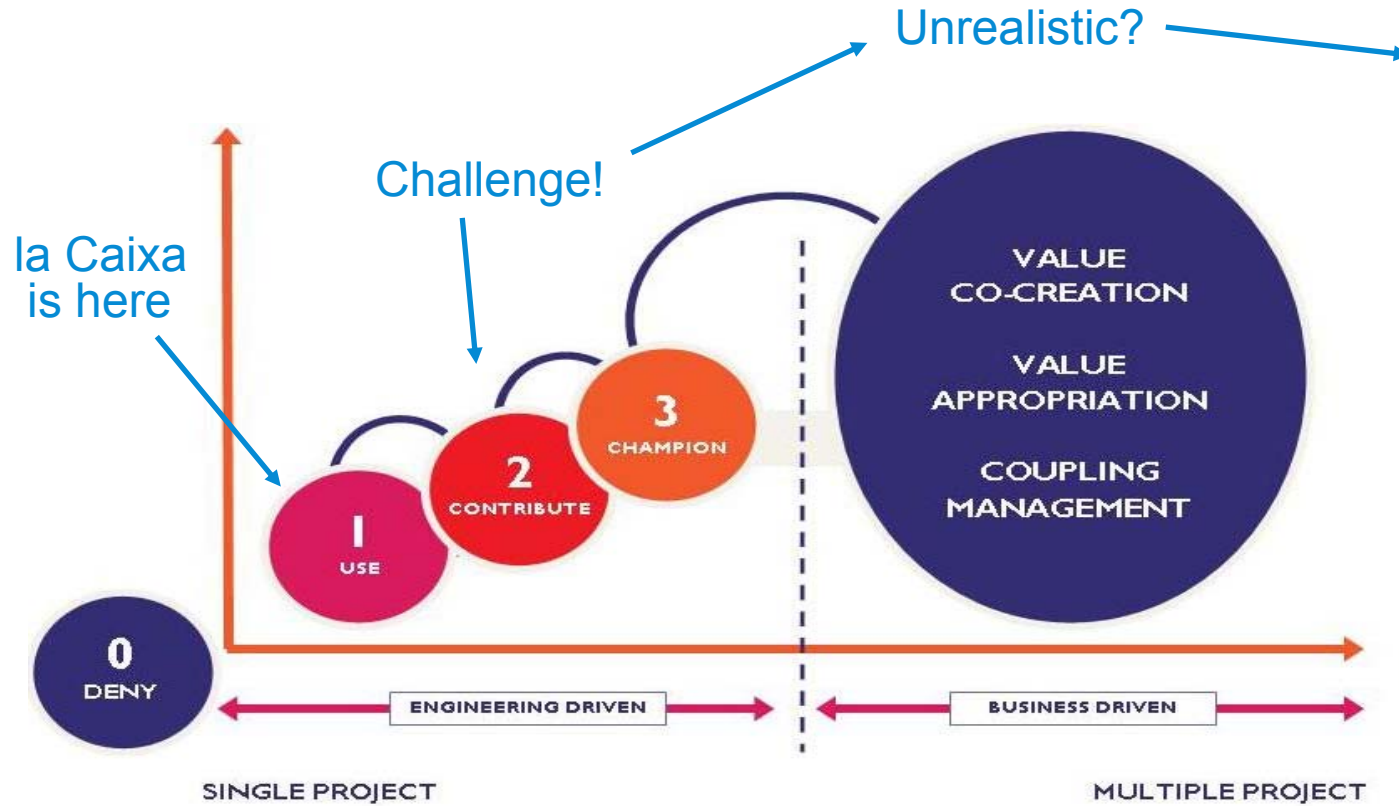


Open Source Adoption

- Significant OSS growth in the last years:
 - Linux, Spring Framework, Eclipse, libraries, ...
- Why? To avoid vendor lock-in? To save money? Yes ... but No!
 - Looking for the Best Tools (commercial vs open source)
 - Looking for Customization / Extensibility ("We're special" syndrome)
- How we got it?
 - Bottom-Up approach
 - No specific FOSS advocate role: developers were our primary advocates
 - Younger "fresh" managers (coming from a mainframe world!)
- Reactions (Fear, Uncertainty and Doubt):
 - Not ready for mission critical enterprise applications
 - Lack of enterprise support / community seen as a group of cyber-hippies
- Risks:
 - We don't have a OSS governance process / policy
 - Legal issues: license types, IP
 - Enterprise Support (SLA) / Community
 - Certified partners (no internal developers)



Open Source Engagement



Source: <http://blogs.the451group.com/opensource/2008/12/04/the-five-stages-of-community-open-source-engagement/>

JP Morgan CDS Analytical Engine becoming open source

2009-01-29 by: Mike Scorelle

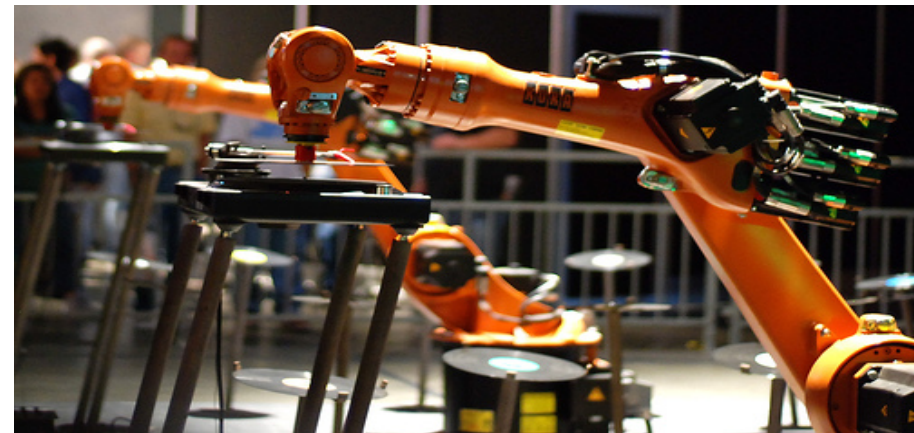
The International Swaps and Derivatives Association, Inc. (ISDA) today announced that J.P. Morgan (NYSE:JPM) has transferred to ISDA its CDS Analytical Engine. The CDS analytical engine, originally developed by the Quantitative Research group at J.P. Morgan, is widely used in the industry to price CDS contracts. ISDA will make the analytical engine available as open source code, thereby increasing transparency around CDS pricing.

"J.P. Morgan has invested a lot of intellectual capital in this analytical engine. Its willingness to assign this to ISDA for us to make it available as open source to the entire industry demonstrates our collective commitment to the integrity of the CDS product," said Robert Pickel, Executive Director and Chief Executive Officer, ISDA. "ISDA and its members are vigilant to public concerns around transparency. This is yet another measure of increased standardization in CDS."

Source: <http://www.anotherfp.com/newsite/story.php?id=832>

Application Development Tools (leitmotiv)

- Software Factory approach using Domain Specific Modeling Languages and a common runtime framework: the industrialization of software development!
 - Insulate developers from technology: focus on the business concepts (what vs how)
 - Automate part of the development and design work
 - Foster reuse of artifacts (component-based development)
 - Strong governance
- Tools and framework are mandatory!
- Benefits:
 - Improved productivity (no silver bullet!)
 - Increases the degree of standardization (code, documentation, ...)
- Risks:
 - Tools become critical
 - Slow innovation on the technical side
- Our history:
 - 1994: Softlab Maestro II, an integrated CASE system based on a OMS repository → Great Success
 - 2002: The steroids custom development workbench → EPIC FAIL!
 - 2007: Pragmatic custom DSM approach → ?



<http://www.flickr.com/photos/ryanicus/1410093194/>

The ABSIS Project

- ABSIS is an acronym for Service Banking and System Integration Architecture
- ABSIS is a new way to develop Management Information Systems for "la Caixa" Group



Organization

Organizational structure that will promote a better alignment with the business areas and will take advantage of the new opportunities offered by the architecture

Governance

Compliance framework and new procedures for continuous improvement

Method

Flexible and adaptive Methodology and Process

Tools

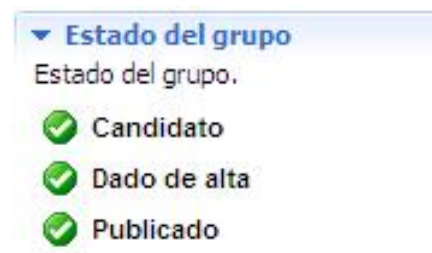
Application Development Tools to industrialize the application development process

Architecture

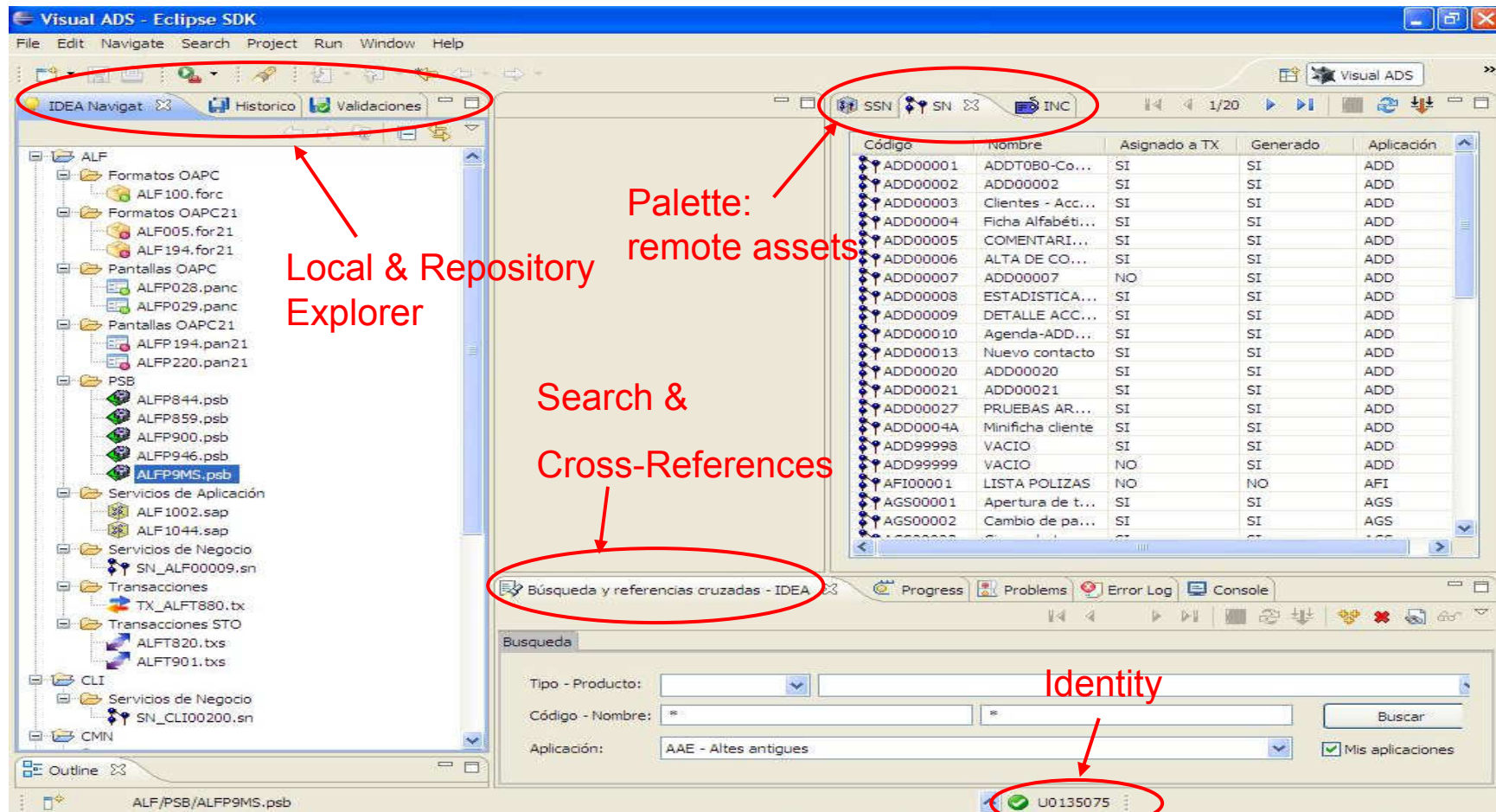
Framework that will allow applications to focus on the business aspects instead of the technical ones

IDEA

- IDEA is an acronym for Integrated Development Environment for ABSIS
- IDEA is a specialized DSM IDE for “la Caixa”:
 - Problem Domain well defined: idioms, abstractions, ...
 - Solution Domain well defined: architecture, implementation, ...
- IDEA is a highly integrated toolset:
 - Based on Eclipse
 - Trying to cover the whole development lifecycle
 - Pragmatic modeling and code generation
- Tools integration is based on a central repository (RDBMS):
 - Storing artifacts as XML files
 - Storing metadata: search and cross-references
- Capabilities:
 - Versioning
 - Basic Workflows
 - Security model
 - Logging
 - Forced plugin upgrades



IDEA Workbench



Visual ADS - Eclipse SDK

File Edit Navigate Search Project Run Window Help

IDEA Navigat Historico Validaciones

Local & Repository Explorer

Palette: remote assets

Search & Cross-References

Identity

Código	Nombre	Asignado a TX	Generado	Aplicación
ADD00001	ADDT080-Co...	SI	SI	ADD
ADD00002	ADD00002	SI	SI	ADD
ADD00003	Clientes - Acc...	SI	SI	ADD
ADD00004	Ficha Alfabéti...	SI	SI	ADD
ADD00005	COMENTARI...	SI	SI	ADD
ADD00006	ALTA DE CO...	SI	SI	ADD
ADD00007	ADD00007	NO	SI	ADD
ADD00008	ESTADISTICA...	SI	SI	ADD
ADD00009	DETALLE ACC...	SI	SI	ADD
ADD00010	Agenda-ADD...	SI	SI	ADD
ADD00013	Nuevo contacto	SI	SI	ADD
ADD00020	ADD00020	SI	SI	ADD
ADD00021	ADD00021	SI	SI	ADD
ADD00027	PRUEBAS AR...	SI	SI	ADD
ADD0004A	Minificha cliente	SI	SI	ADD
ADD99998	VACIO	SI	SI	ADD
ADD99999	VACIO	NO	SI	ADD
AFI00001	LISTA POLIZAS	NO	NO	AFI
AGS00001	Apertura de t...	SI	SI	AGS
AGS00002	Cambio de pa...	SI	SI	AGS

Búsqueda y referencias cruzadas - IDEA

Progress Problems Error Log Console

Busqueda

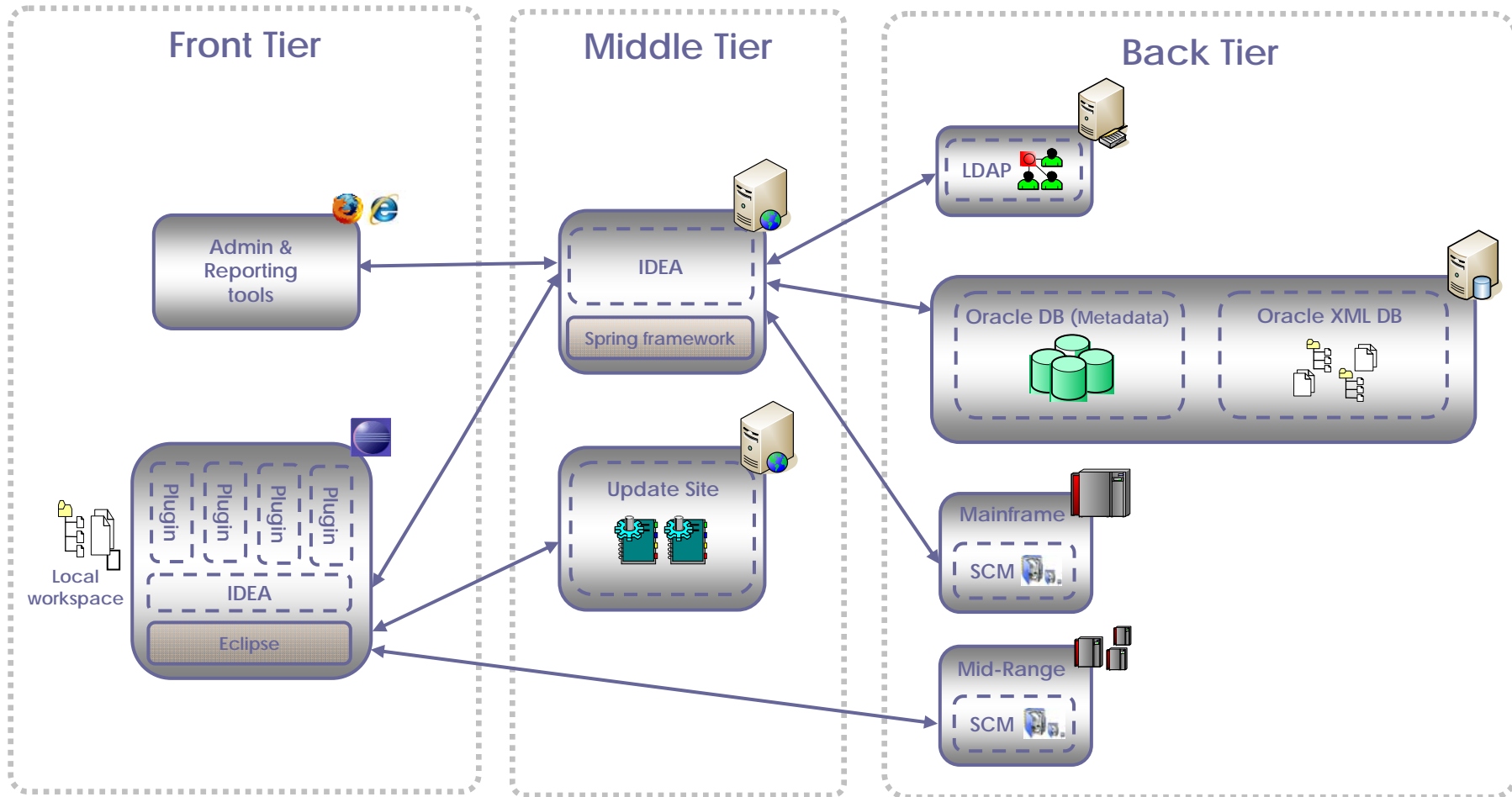
Tipo - Producto:

Código - Nombre: * *

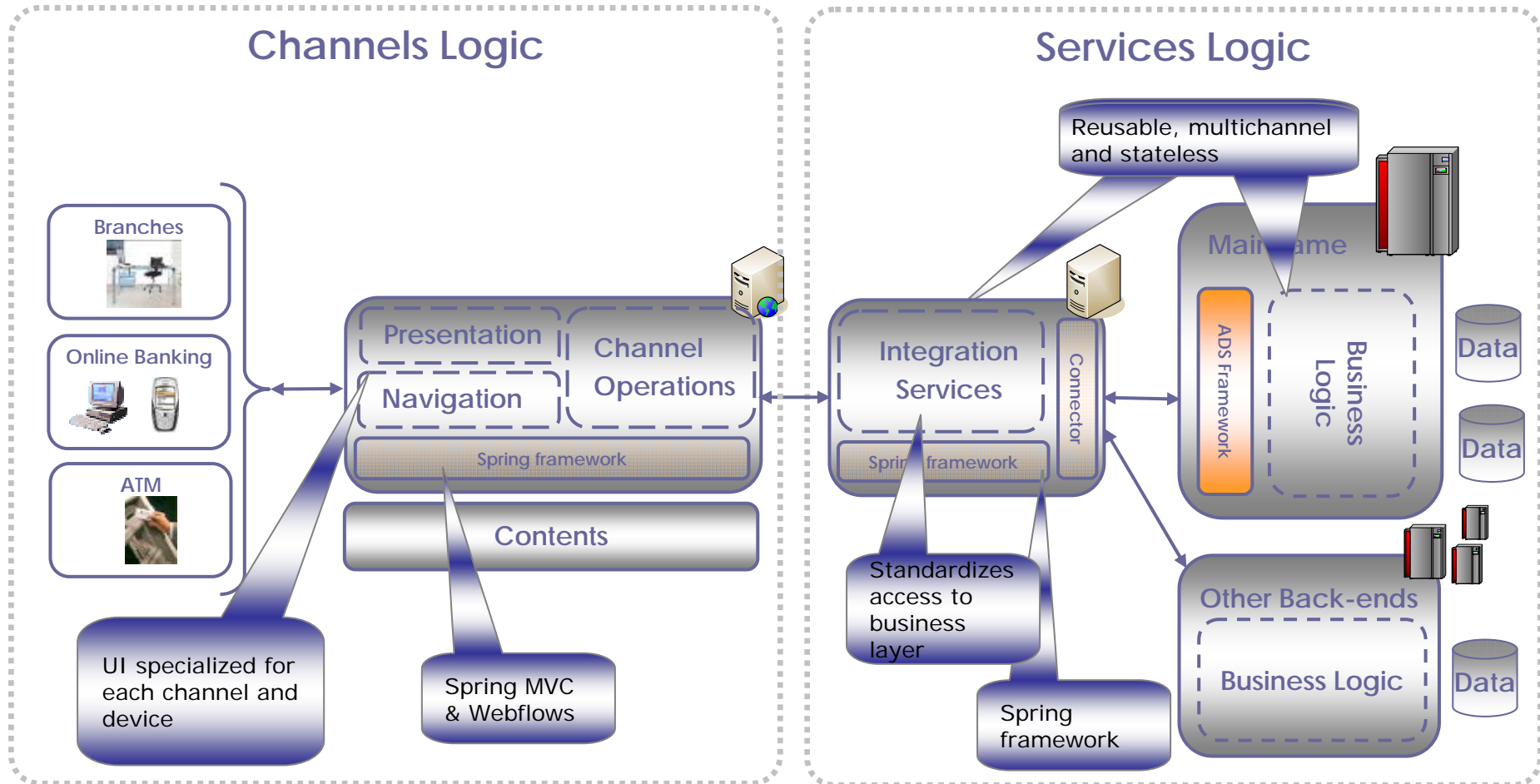
Aplicación: AAE - Altas antiguas Mis aplicaciones

U0135075

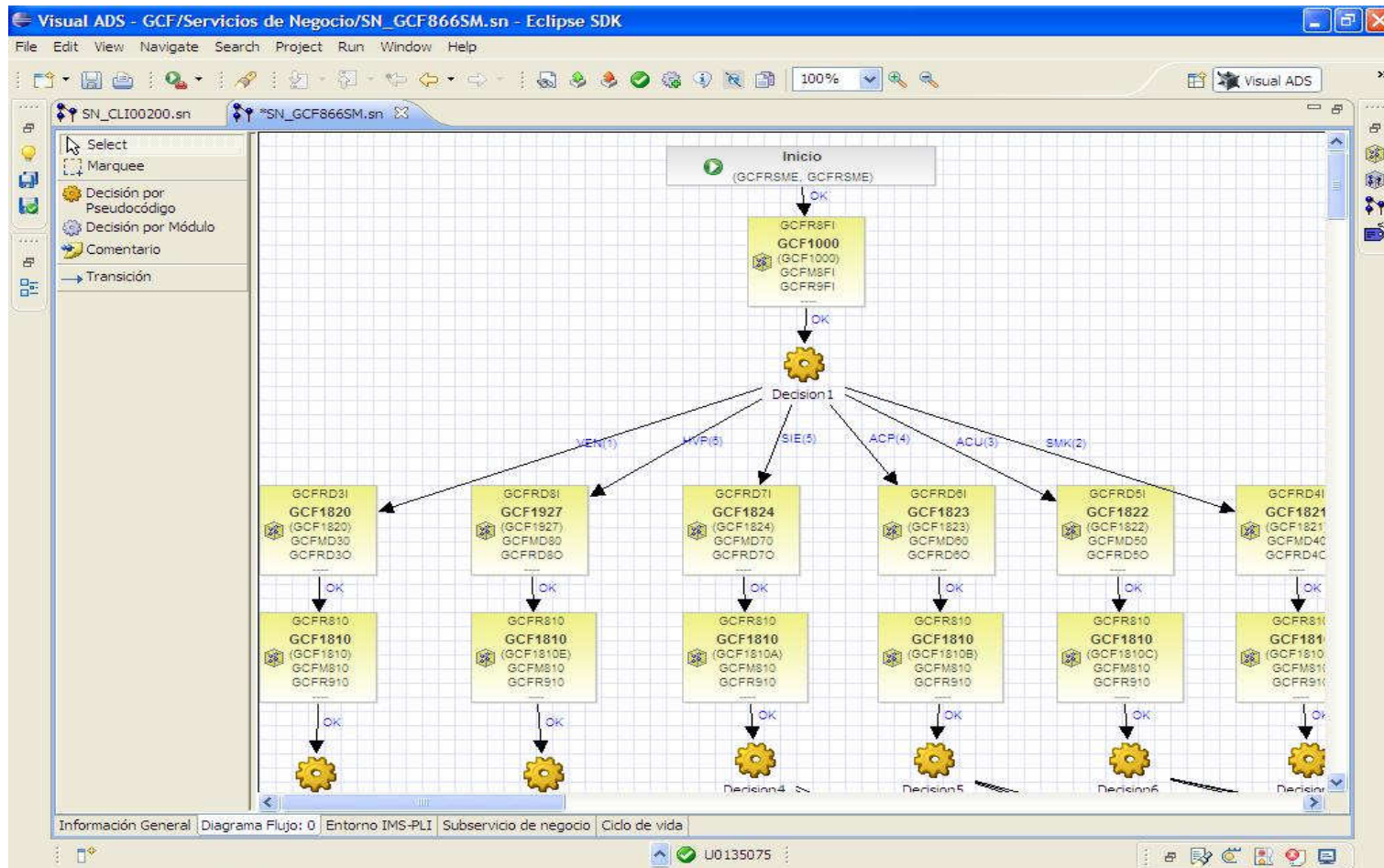
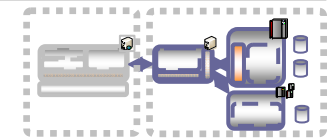
IDEA Architecture



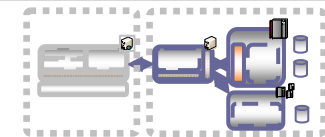
(Our 30,000 feet) ABSIS Architecture Logical View



IDEA Tools: Business Services



IDEA Tools: Business Services



Visual ONLINE - ALF/PSB/ALFP9MS.psb - Eclipse SDK

File Edit Navigate Search Project Run Window Help

ALFP9MS.psb

Definición en IMS

▼ Estado de la PSB en IMSs
En esta sección se refleja el estado de la PSB en cada IMS

IMS	Estado de la Transacción
IMSEXP1	Definida
IMSEXP2	No Definida
IMSEXP5	Definida

Actualizar Cancelar Fuente Definición IMS

▼ Histórico de Movimientos IMS de la PSB
Se muestran los datos referentes a los últimos movimientos realizados en cada IMS para la PSB

IMS	Fecha	Estado	Tipo de Movimien
IMSEXP1	2008-07-17 10:47:21	Aceptado	Inclusión
IMSEXP5	2008-07-17 10:47:21	Aceptado	Inclusión

Solicitar Movimientos Eliminar Actualizar Cancelar

Código

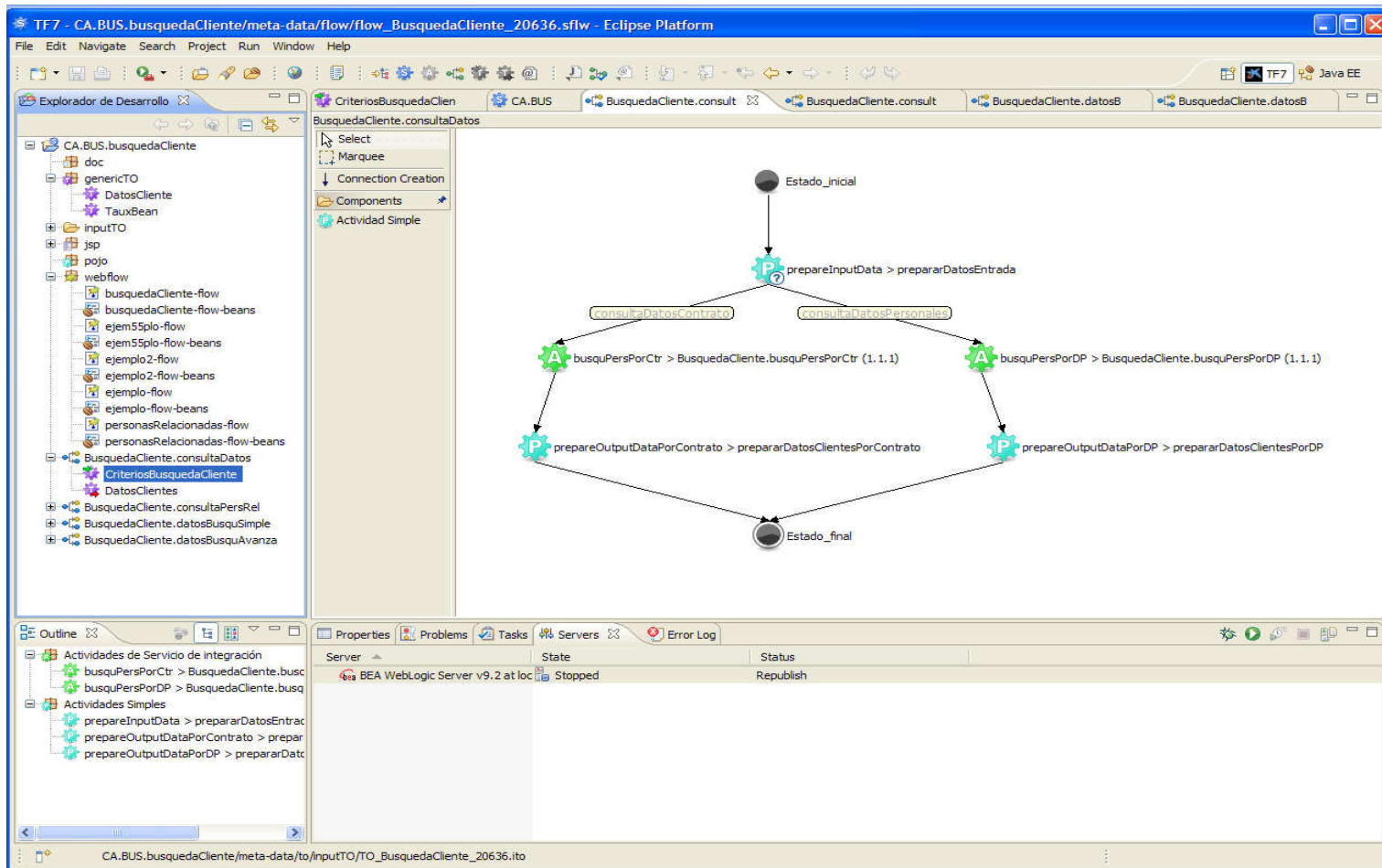
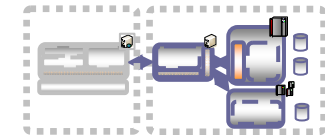
- ACDA015
- ACDA016
- ACDA017
- ACDA032
- ACDA0610
- ACDA067
- ACDA068
- ACDA070
- ACDB01Z 001
- ACDB01Z 002
- ADPA340
- ADPB03A 001
- ADPB03A 002
- ADPB03A 003
- ADPB03A 004
- ADPB03A 005
- ADPB03A 006
- ADPB03A 007
- ADPB03A 008
- ADPB03A 009
- ADPB03A A 10
- ADPB03A A 17
- ADPB04Z 001
- AGAB01A A 18
- AGSA0421

Información General | PCBs | Definición en IMS | Ciclo de Vida

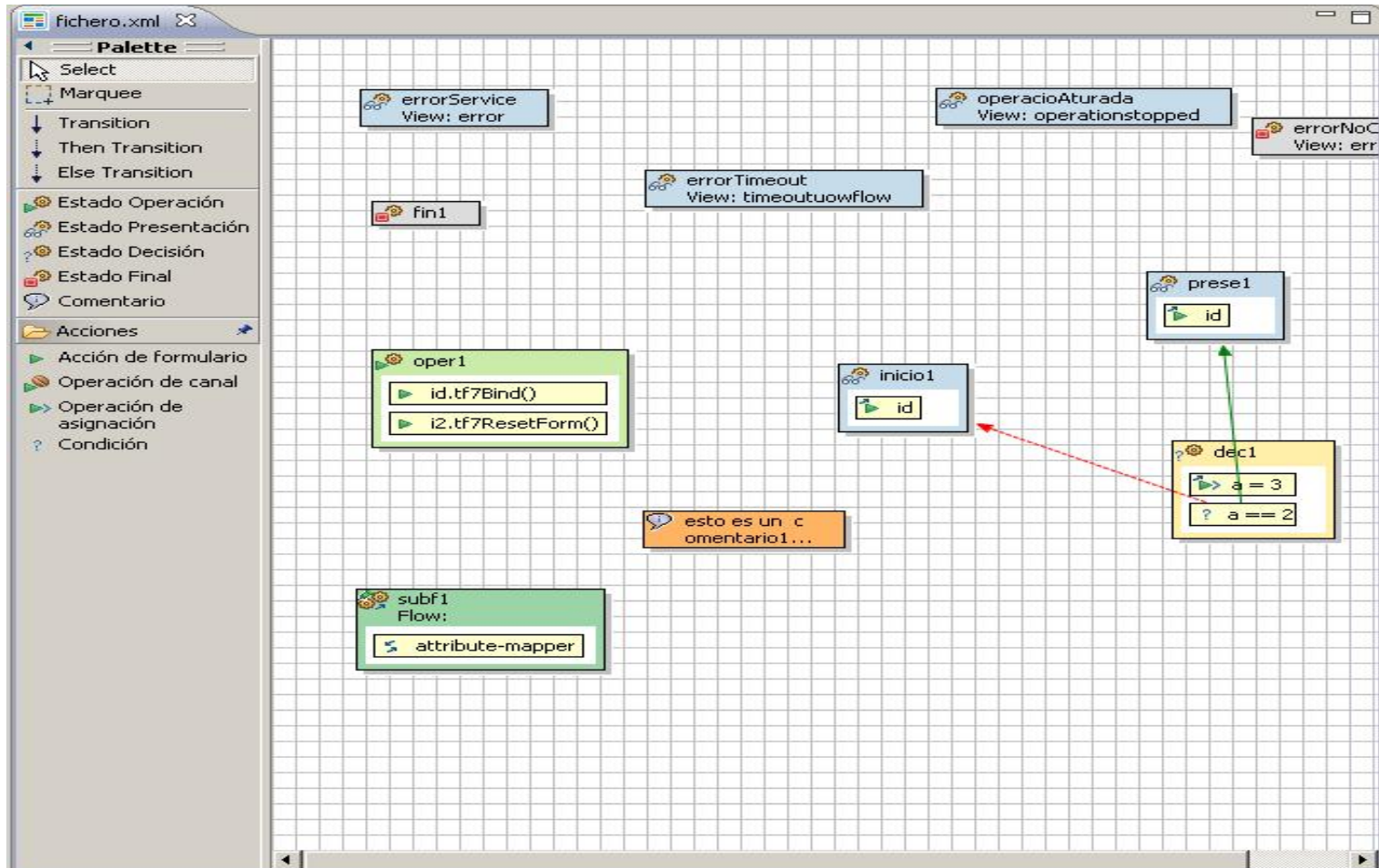
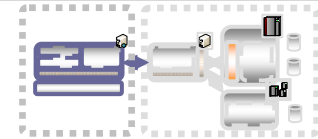
Búsqueda y referencias cruzadas - IDEA Progress Problems Console Outline

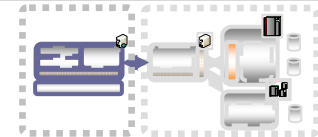
U0135075

IDEA Tools: Integration and Business Services

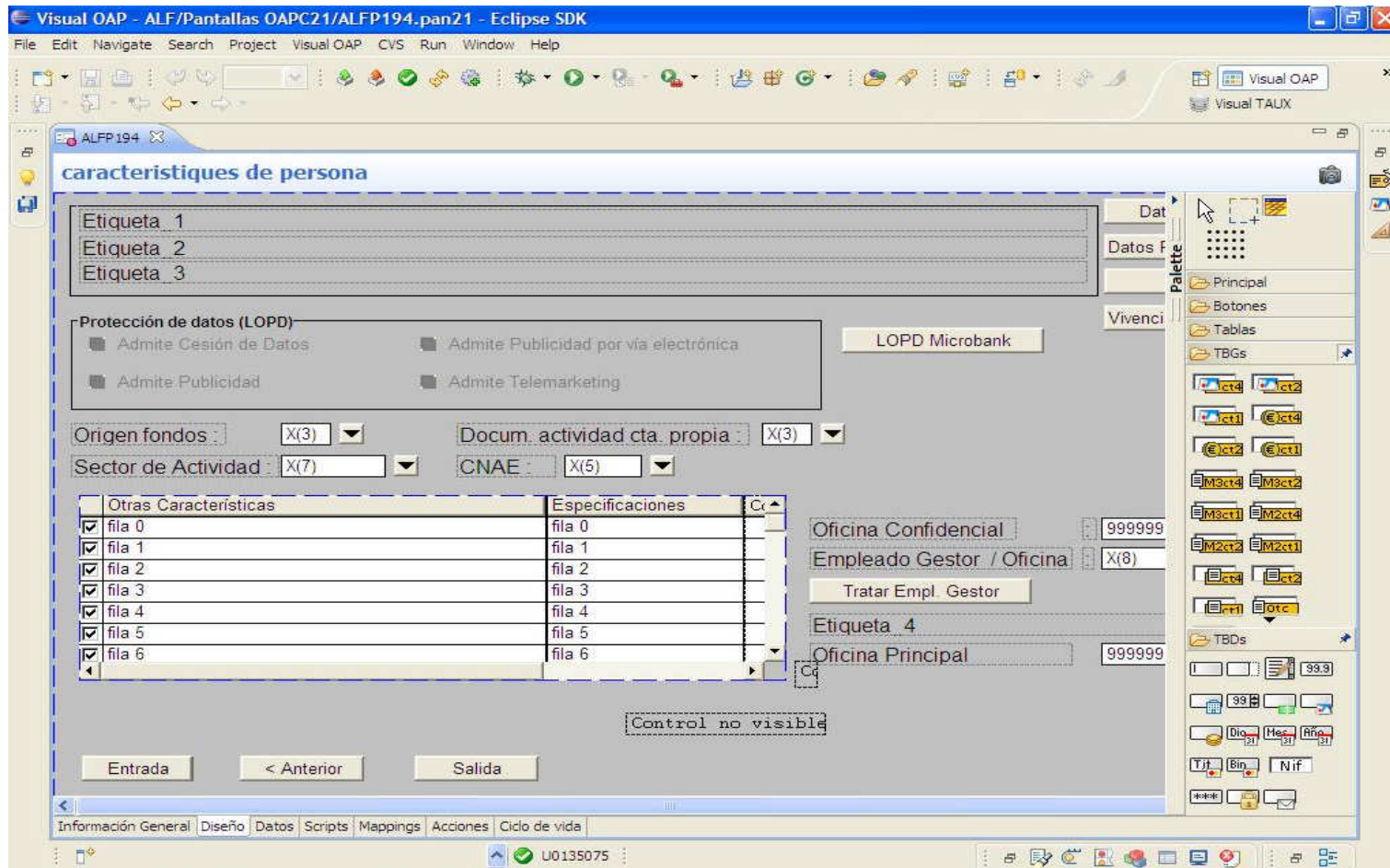


IDEA Tools: Flow and Navigation logic





IDEA Tools: User Interface

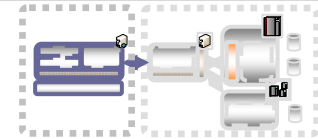
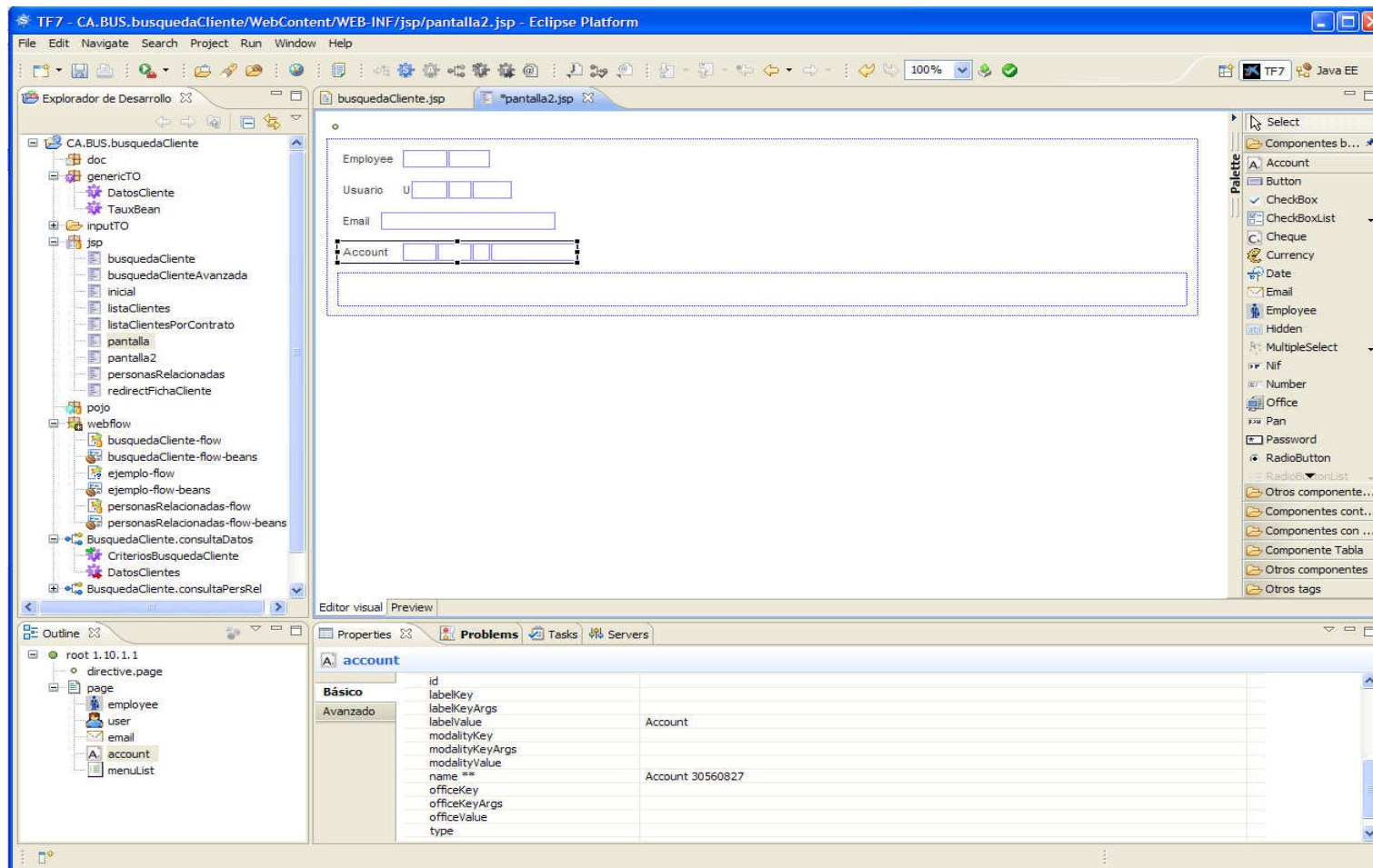


The screenshot shows the Eclipse IDE with the Visual OAP plugin. The main workspace displays a user interface design for a form titled "características de persona". The form includes several sections:

- Etiquetas:** Three text labels labeled "Etiqueta 1", "Etiqueta 2", and "Etiqueta 3".
- Protección de datos (LOPD):** A section with four checkboxes: "Admite Cesión de Datos", "Admite Publicidad por vía electrónica", "Admite Publicidad", and "Admite Telemarketing". A "LOPD Microbank" button is also present.
- Form fields:** "Origen fondos" (X(3)), "Docum. actividad cta. propia" (X(3)), "Sector de Actividad" (X(7)), and "CNAE" (X(5)).
- Table:** A table with two columns: "Otras Características" and "Especificaciones". Both columns have rows labeled "fila 0" through "fila 6".
- Form elements:** "Oficina Confidencial" (999999), "Empleado Gestor / Oficina" (X(8)), "Tratar Empl. Gestor" button, "Etiqueta 4", and "Oficina Principal" (999999).
- Buttons:** "Entrada", "< Anterior", and "Salida".

The right side of the IDE shows a "Palette" with various UI components like "Principal", "Botones", "Tablas", and "TBGs". The status bar at the bottom indicates the current element is "U0135075".

IDEA Tools: User Interface

The screenshot shows the Eclipse IDE interface for developing a web page. The main editor displays a form with the following fields:

- Employee:
- Usuario: U
- Email:
- Account:

The left sidebar shows a project explorer with a tree view of files and folders. The bottom right shows a properties view for the 'account' component.

Básico		
id		
labelKey		
labelKeyArgs		
labelValue		Account
modalityKey		
modalityKeyArgs		
modalityValue		Account 30560827
name	**	
officeKey		
officeKeyArgs		
officeValue		
type		

Financial Teller WorkBench

Accede a la información y operativa del cliente con los menús y submenús de las pestañas.

Mini ficha: información básica del cliente.

Eclipse

Ciente identificado. Victor Sauler Portal

Pulsando estos enlaces se accede a la principal información de los contratos.

Acceso a los titulares del contrato.

Acceso a la operativa frecuente de cada contrato.

JDIC embedded browser

Terminal Financiero

Cliente Comercial Productos Oficina Atención rápida Actualidad

Victor Sauler Portal 12345678A

Reiniciar (F11) Call Center

Posiciones Comercial Datos Persona Riesgo Análisis Informes

Lista Operativa Posición Global Pasivo Activo Servicios Grupo Económico

Lista Operativa

Datos a 28-09-2007 10:44:12h

Producto	Relación/orden	Saldo (€)	Acciones
Ahorro (acceder)			
0555 02 99999959 Cuenta corriente	Titular 1	1.200,00	Operativas
9690 34 99999971 Ahorro	Titular 1	10.000,00	Operativas
3060 25 99999996 Gestión tesorería	Titular 1	5.245,00	Operativas
9712 01 99999906 Libreta a la vista	Titular 1	2.665,00	Operativas
9712 01 99999905 Libreta a la vista	Titular 1	28.284,00	Operativas
9712 01 99999905 Libreta a la vista	Titular 1	17,00	Operativas
3965 72 99999974 Ahorro	Titular 1	0,00	Operativas
Plazo			
3965 02 99999997 Imposición a plazo	Titular 1		Operativas
Emisiones Caixa			
9649 11 099999919 Deuda subordinada	Titular 1		
9649 11 099999919 Deuda subordinada	Titular 1		
Valores			
9610 40 099999944 Renta variable	Titular 1		Operativas
Crédito abierto (acceder)			

Victor Sauler Portal
CIF: 12345678A

Datos Personales

Fecha const.: 01-01-1974 (33 años)
CNAE: 80421
Teléf.: 933 577 711, 933 577 712
Móvil: 654 634 578, 639 876 524
E-mail: victor.sauler@lacaixa....
Oficinas: 9712

Posición

Pasivo: 785.976 €
Riesgo Directo: 93.899 €

Alertas de Riesgo
Plan de acción desfavorable

Datos Complementarios

Q&A

Ferran Rodenas
frodenas@lacaixa.es
@ferdy

Thank You!