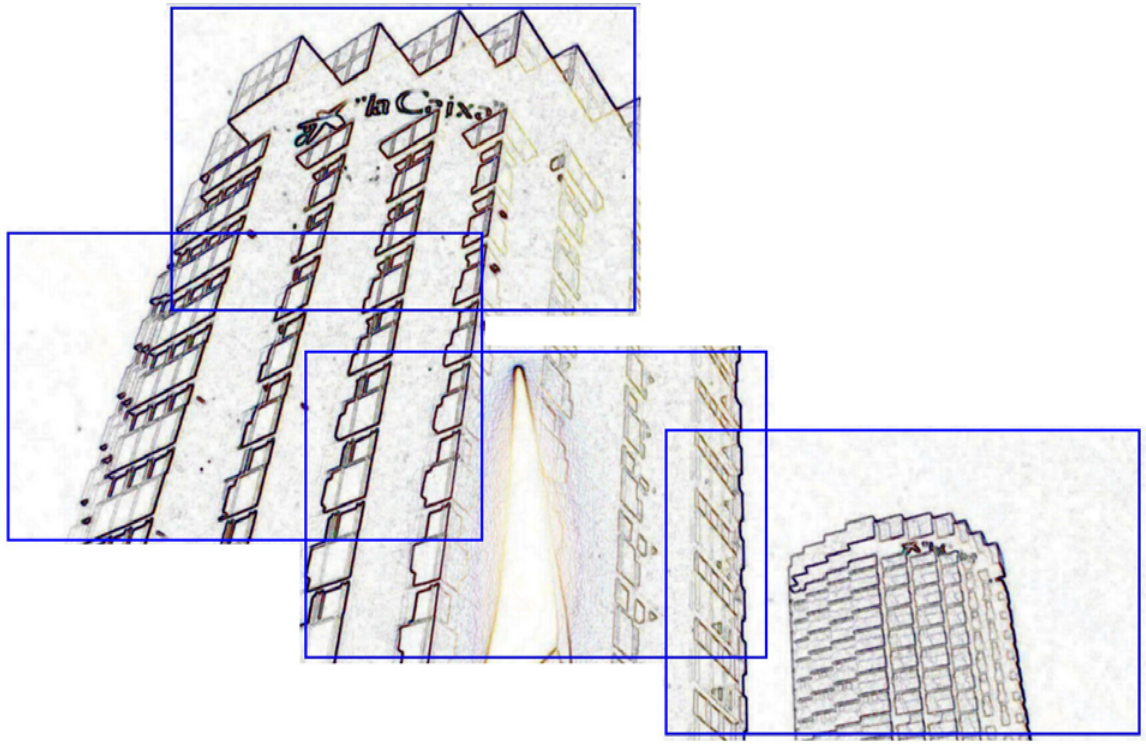
# Repository Based Application Development Environment for Banking Systems



**Ferran Rodenas**
**IT Enterprise Architecture Department**

# Agenda

La Caixa at a glance
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Open Source Engagement
Application Development Tools
The ABSIS Project
IDEA
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IDEA Architecture
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## *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%)

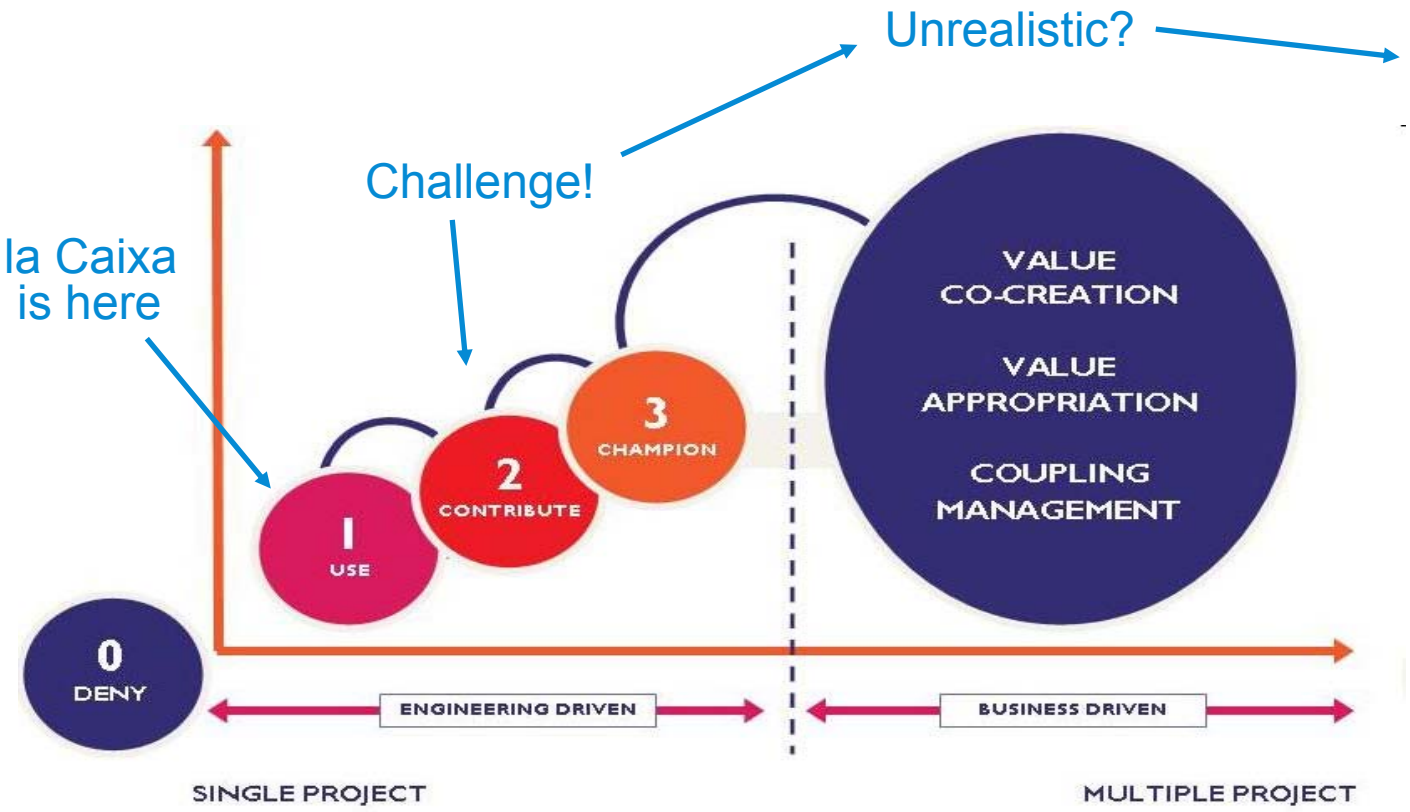
Telefónica · accenture (High performance. Delivered.) · Microsoft · everis (attitude makes the difference) · EDS (GLOBAL FIELD SERVICES) · ORACLE (ESPAÑA) · Capgemini (CONSULTING.TECHNOLOGY.OUTSOURCING) · IBM · Getronics (ICT SOLUTIONS AND SERVICES)

## 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

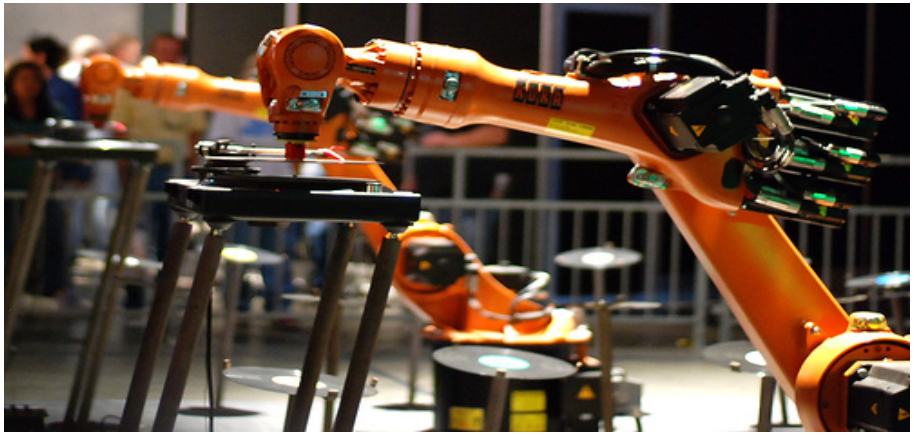
The International Swaps and Derivatives Association, Inc. (ISDA) today announced that J.P. Morgan (NYSE:JPM) has transferred to ISDA its CDS Analytical Engine. The CDS analytical engine, originally developed by the Quantitative Research group at J.P. Morgan, is widely used in the industry to price CDS 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



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

- 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 → ?

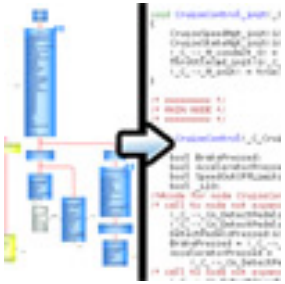
## The ABSIS Project

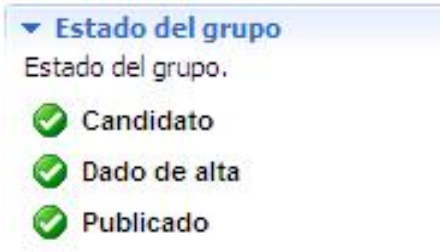
- ABSIS is an acronym for Service Banking and System Integration Architecture
- ABSIS is a new way to develop Management Information Systems for “la Caixa” Group

| | |
|---|---|
| **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 |

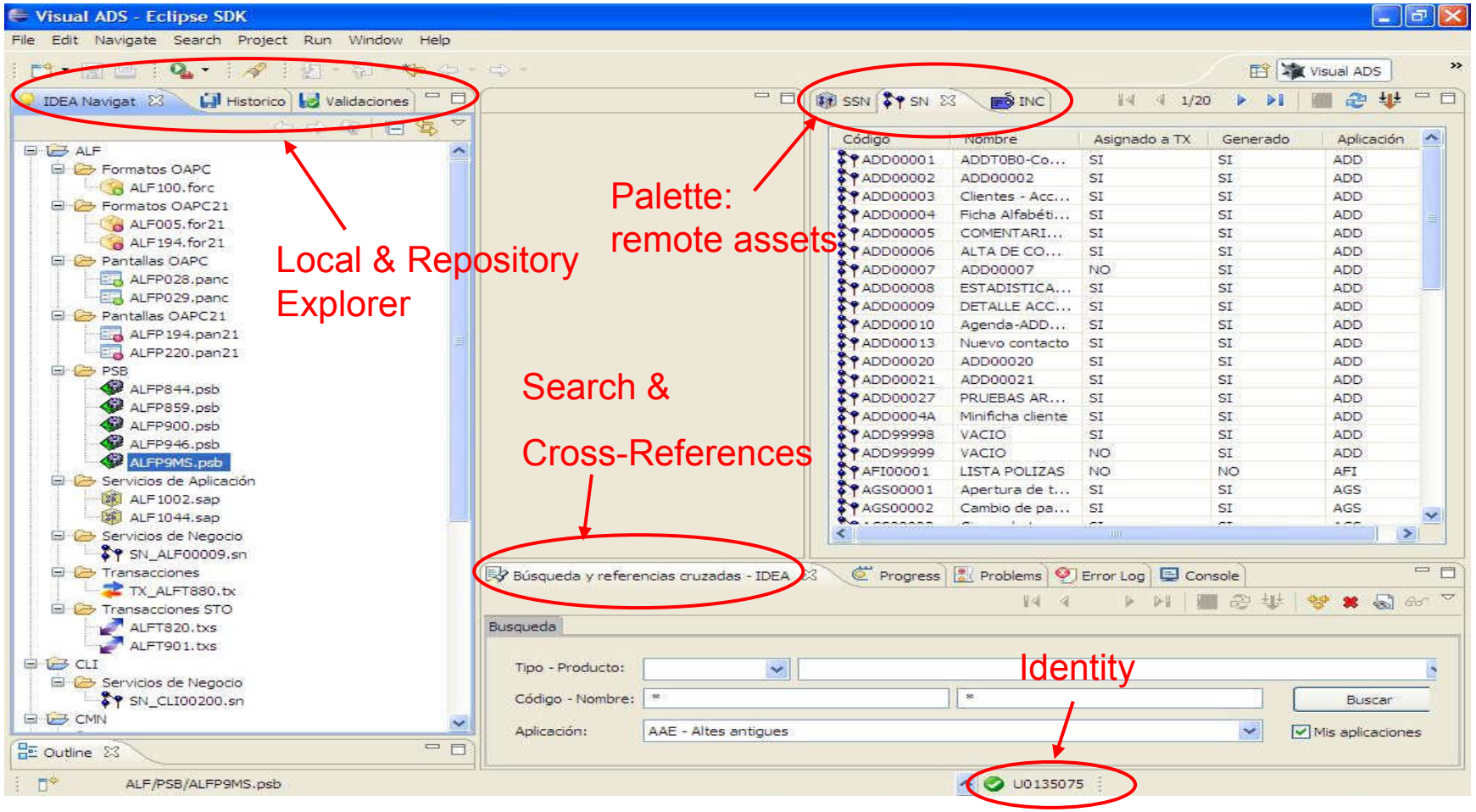
## IDEA

- 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

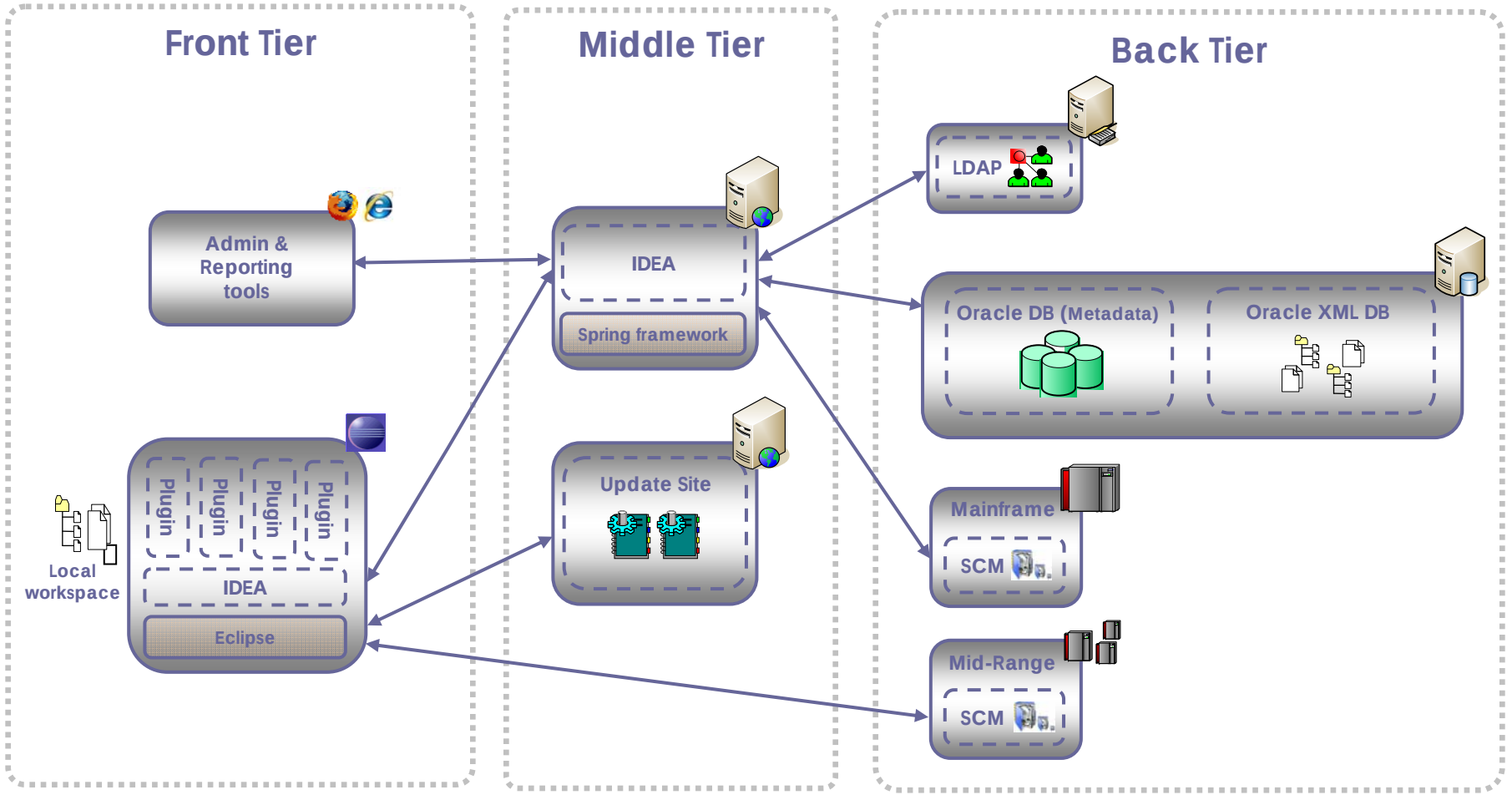


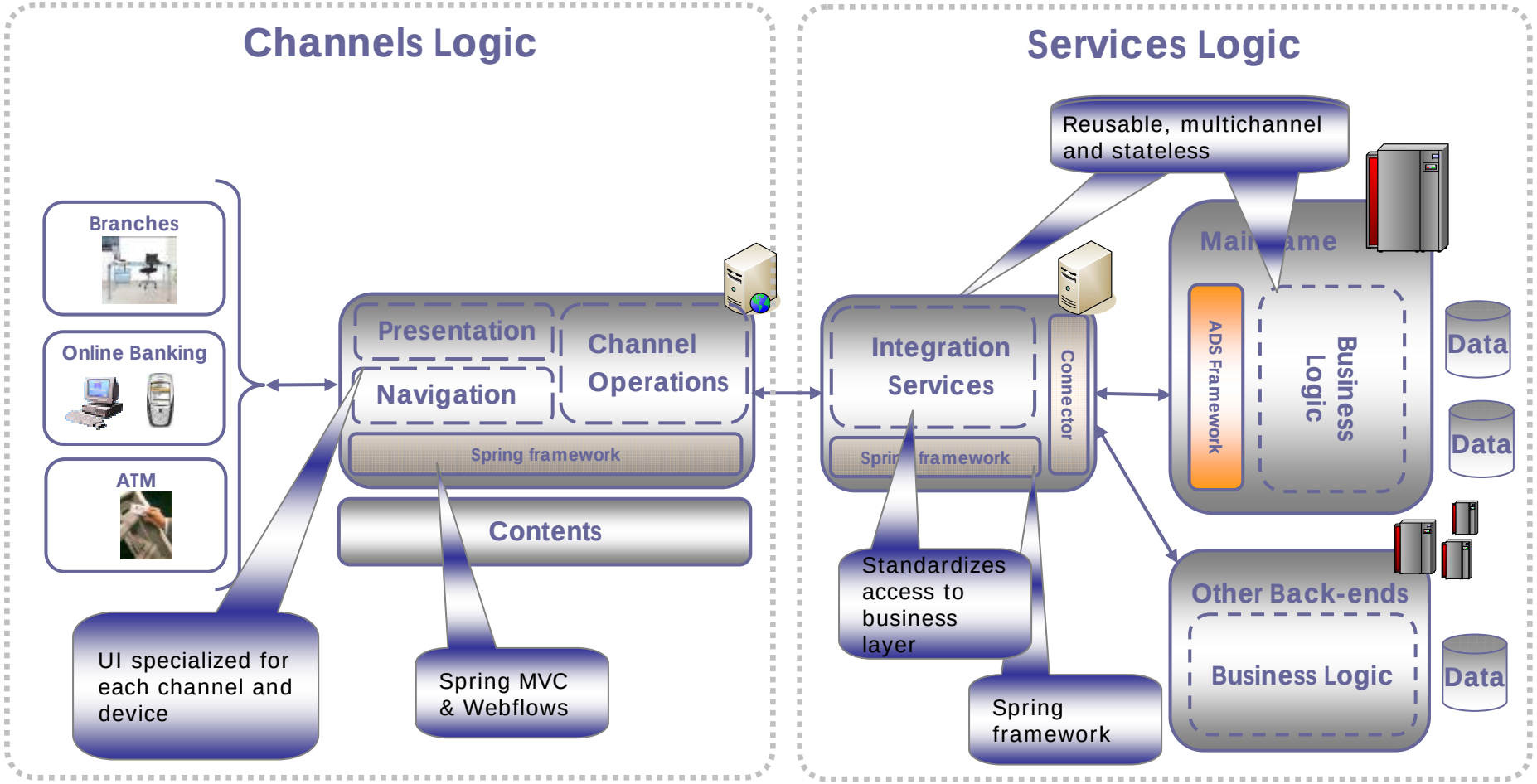

## IDEA Workbench

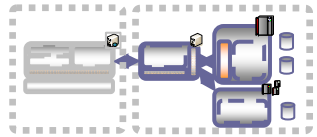


## IDEA Architecture

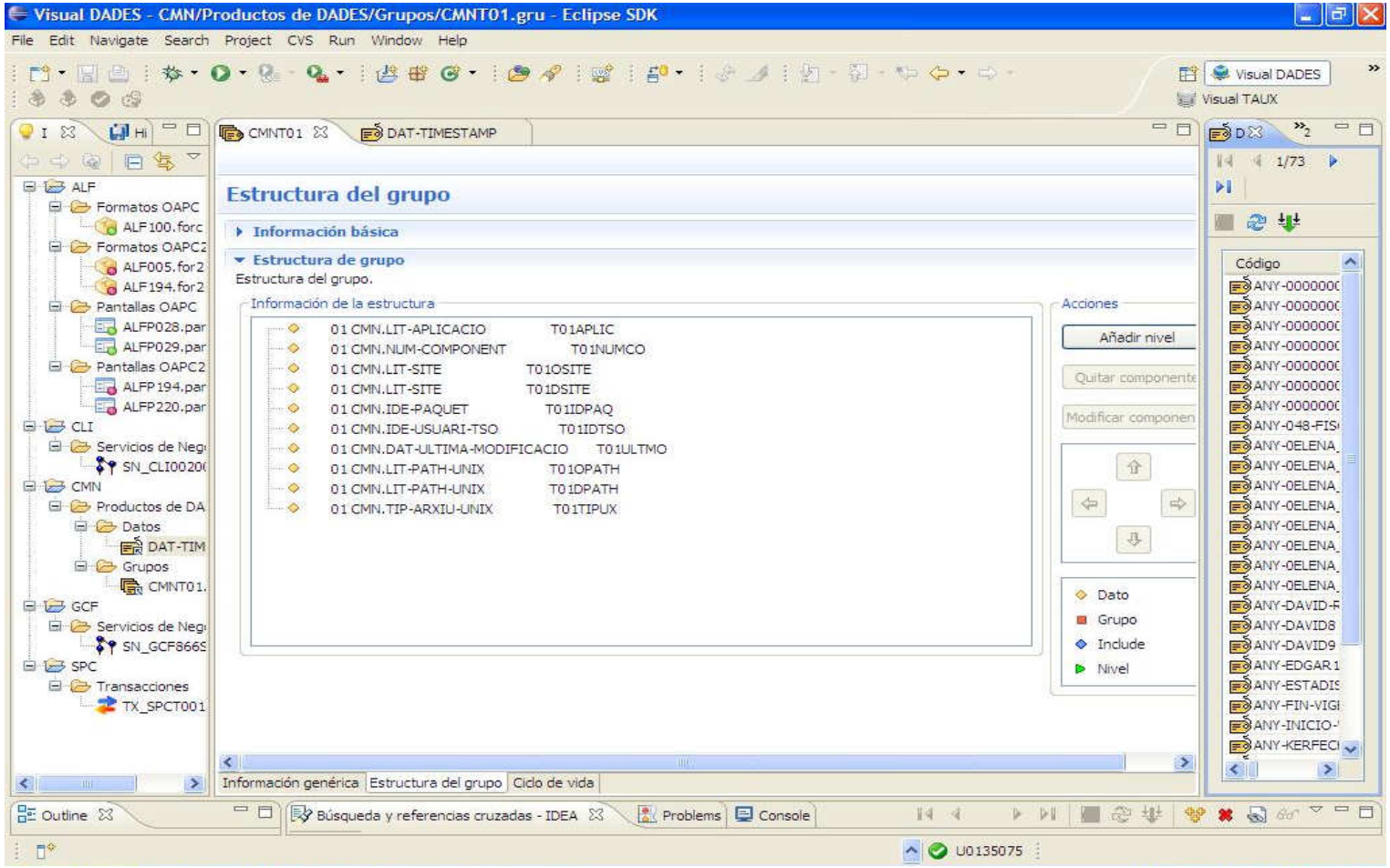


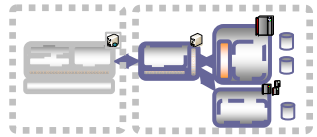
## *(Our 30,000 feet) ABSIS Architecture Logical View*





## *IDEA Tools: Data*





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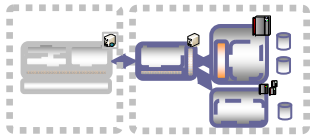
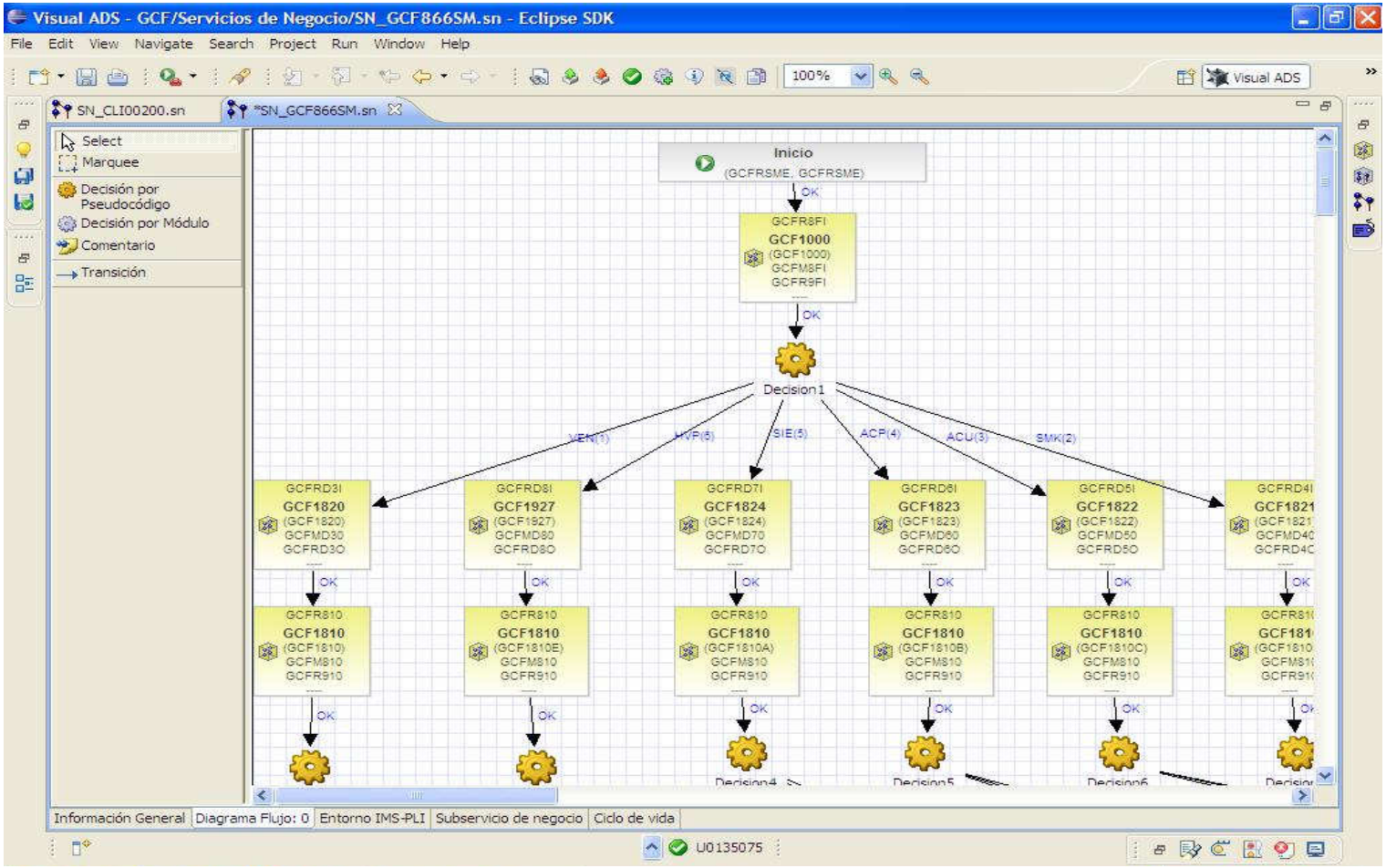


## *IDEA Tools: Business Services*



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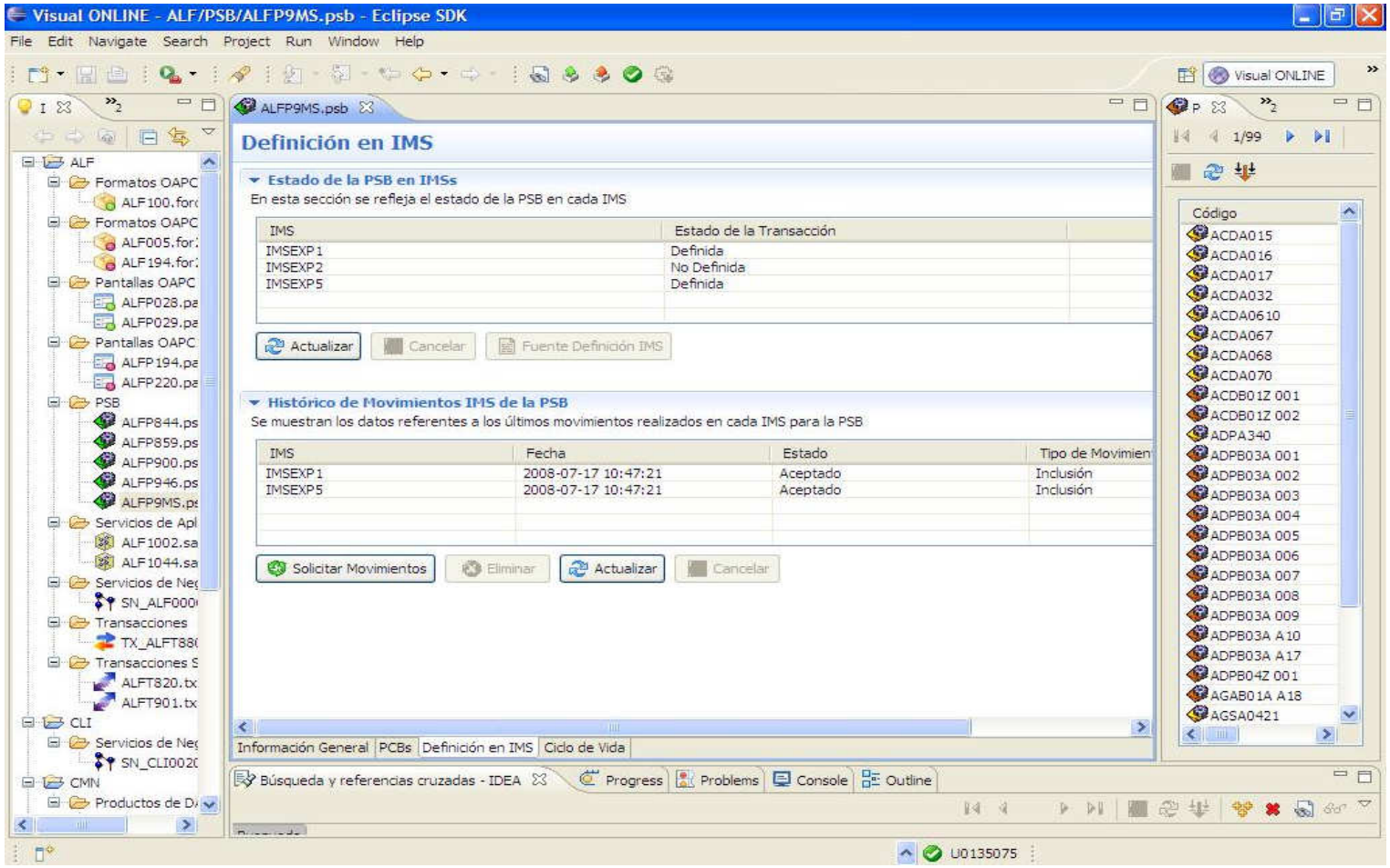
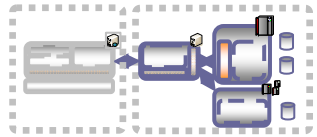
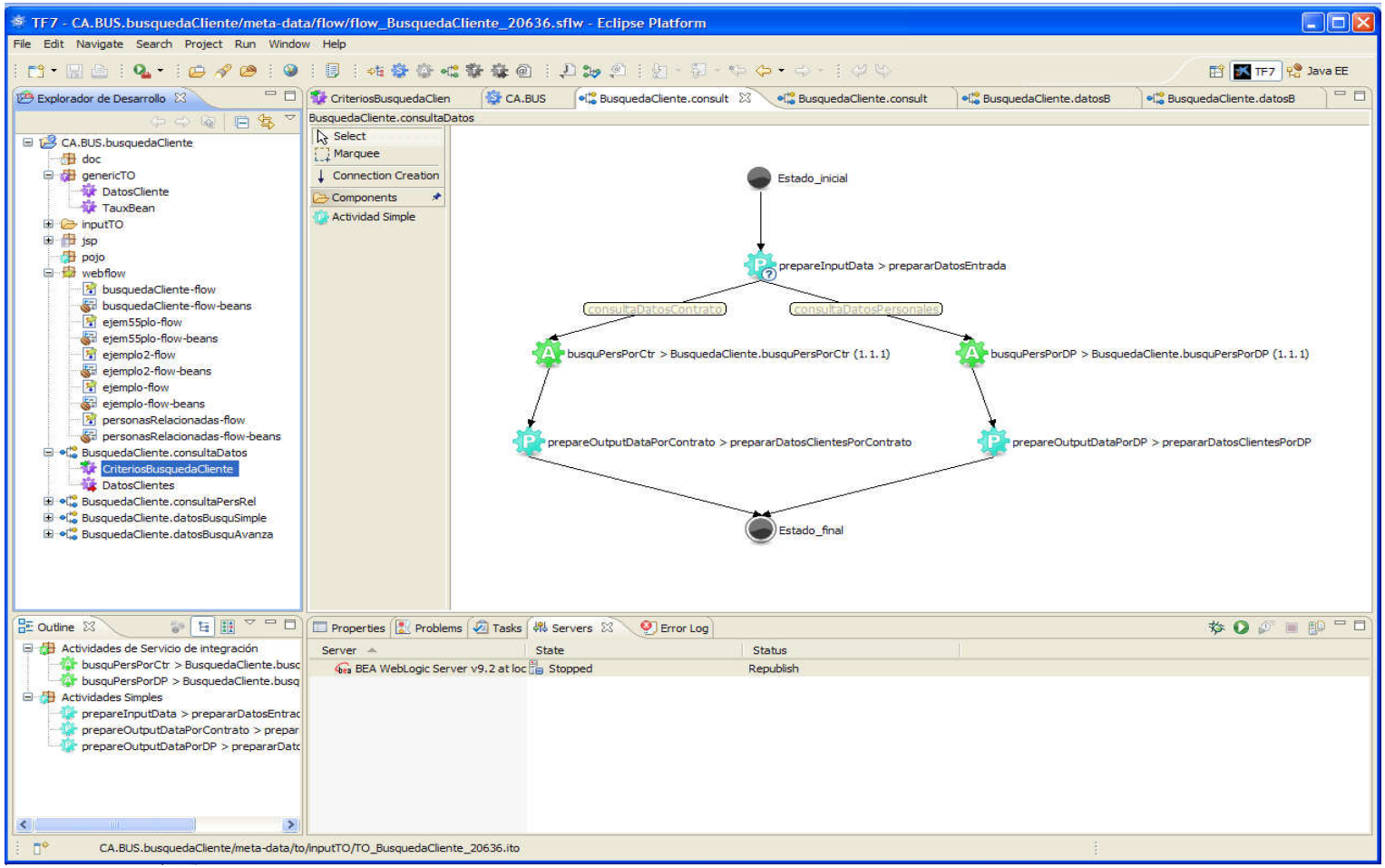
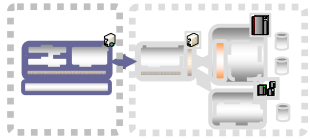


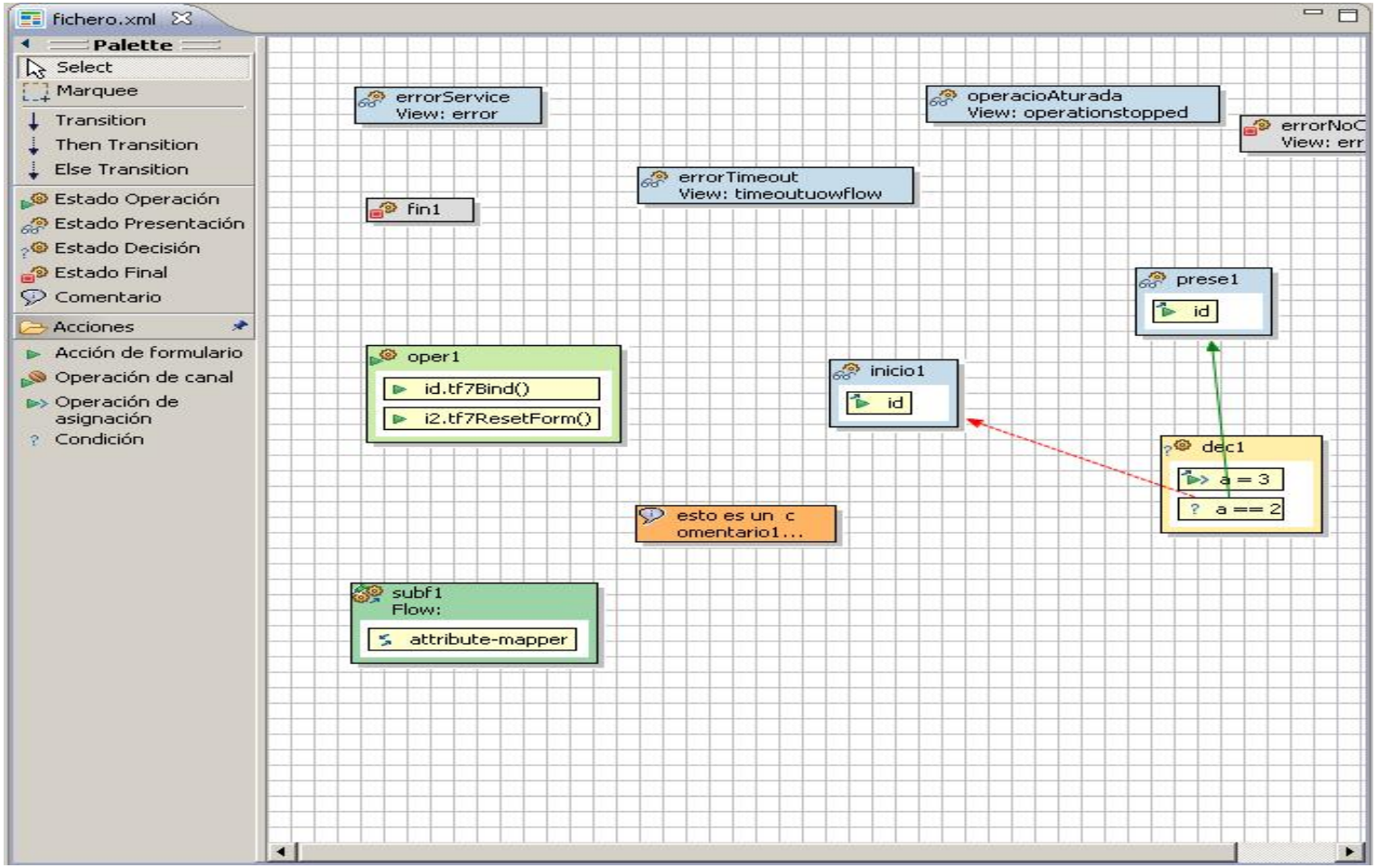


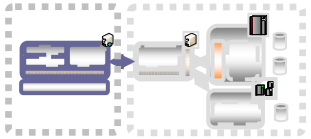
# *IDEA Tools: Integration and Business Services*



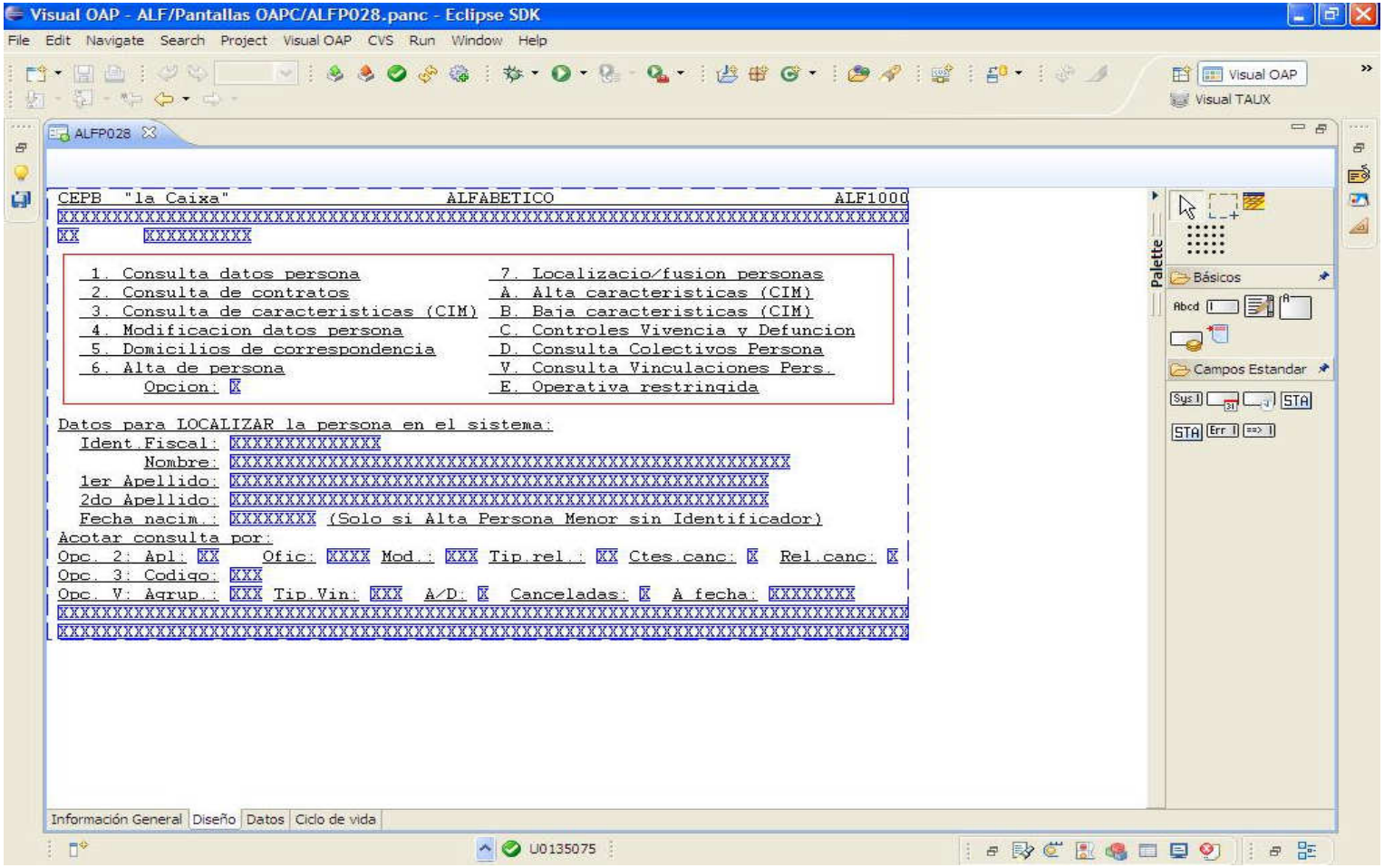


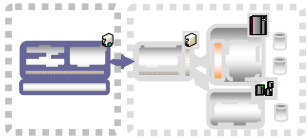
# *IDEA Tools: Flow and Navigation logic*





## *IDEA Tools: User Interface*





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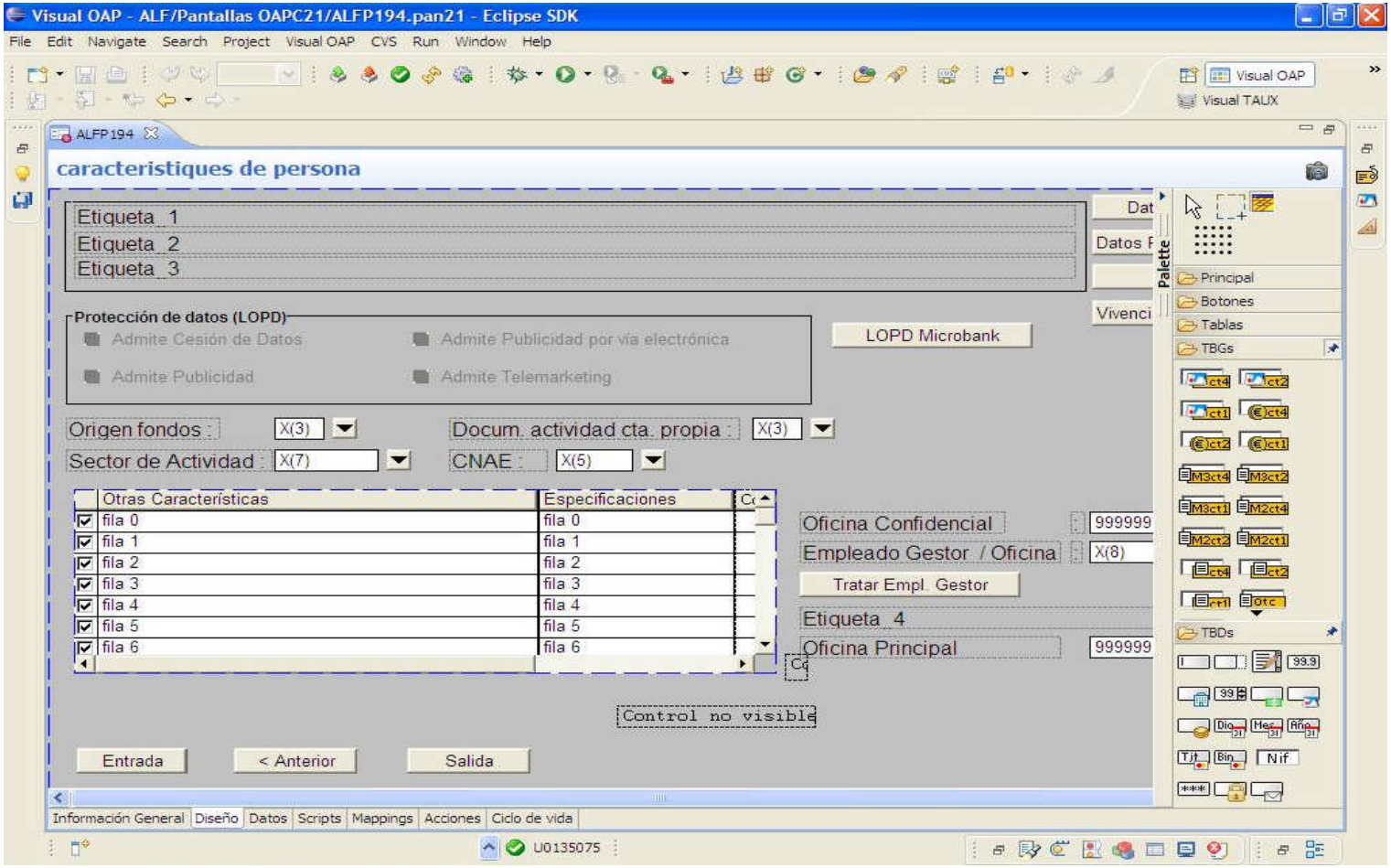

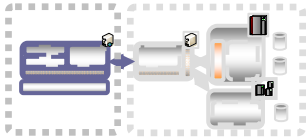

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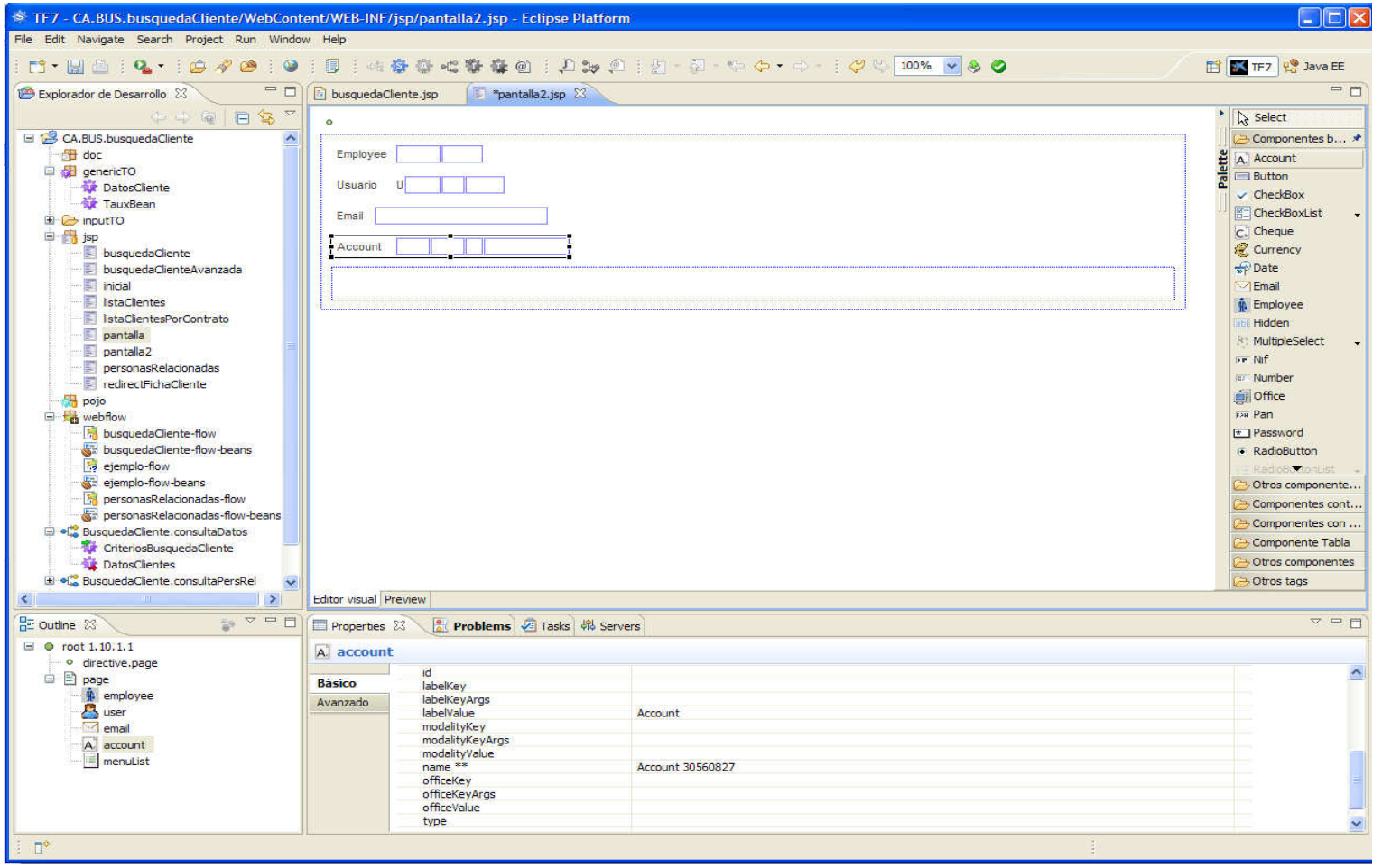
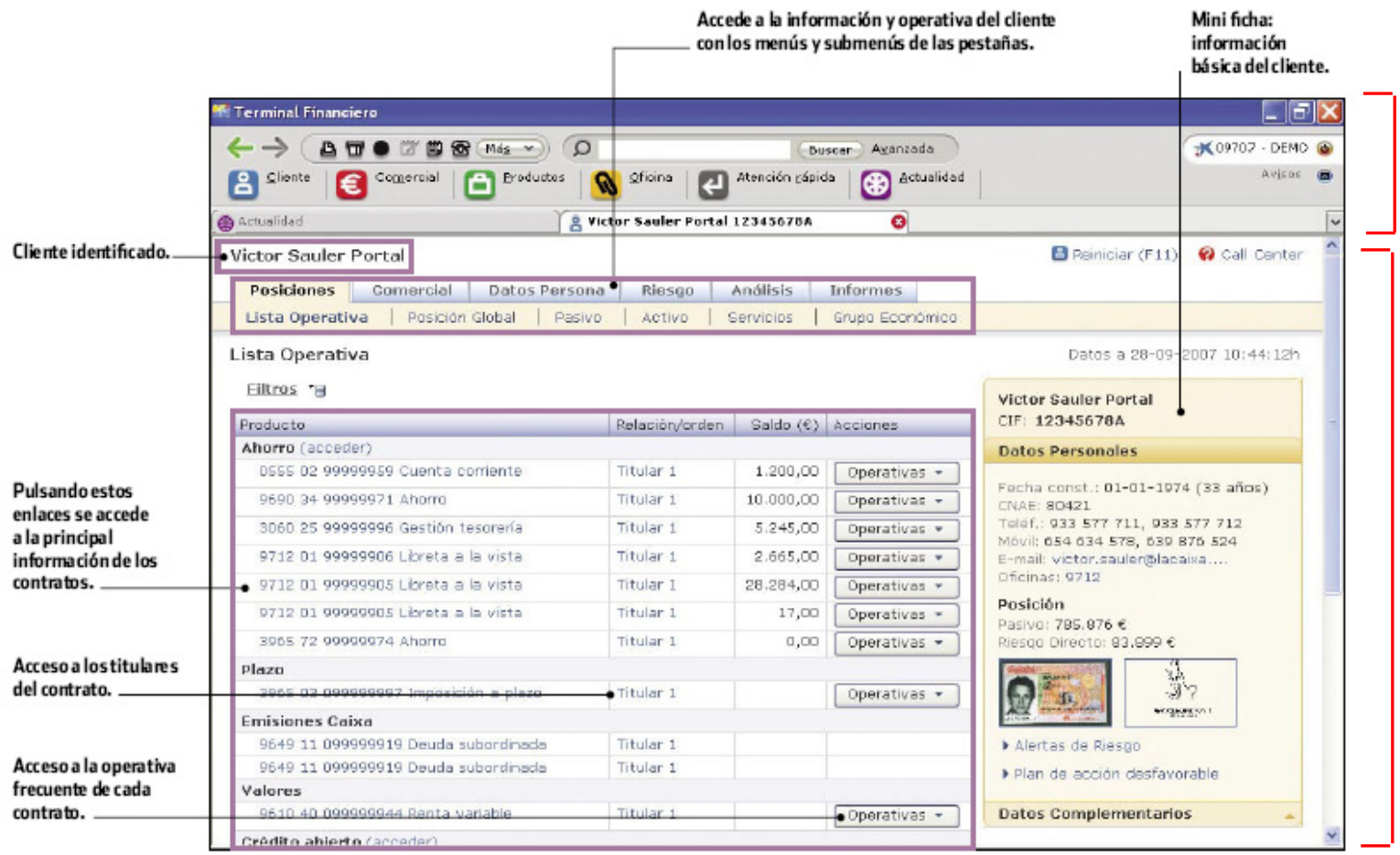


## *Financial Teller WorkBench*



# Q&A

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# *Thank You!*