

Corporate Presentation Modernising 4GL applications

Q1 2019



FOUR Js
The Power of Simplicity

Genero

Modernizing your application



FOUR Js
The Power of Simplicity



Migrating to Genero

Genero vs. I4GL

- **Genero is compatible with I4GL**
 - Just recompile and run!
- **Your existing code will also support:**
 - Windows 10, macOS, Linux, Unix, browsers, mobile devices
 - Removes most limitations of the I4GL language
 - Multiple dialogs, multiple selects, drag and drop
 - Graphical widgets
 - Etc...
 - Most industry standard databases inc. open source
 - Web Services – SOAP/RESTful
 - Support for XML and JSON
 - Java integration (JNI)



Migrating to Genero

History – I4GL penetration

Data Management Solutions

Classic Tools: 4GL Family

- Perfect choice for character based OLTP applications and batch job processing
 - Superior reporting capabilities
 - Easily manages the most complex business logic
 - Char-based HW still prevalent in the customer base
- Works with all Classic Servers & IDS
- 52% of our customer base have 4GL applications
→ Four million active Informix-4GL users today!

The IBM logo, consisting of the letters 'IBM' in a blue, striped font, with a registered trademark symbol (®) to the right.

Migrating to Genero

History - I4GL penetration

```
Terminal
Query Add Update Trash Browse First Previous Next Last ...

Employee Number [      1]
First Name      [Olga      ]
Middle Name(s)  [Francesco ]
Surname         [Grohl     ]
Preferred Name  [Vina      ]
Title           [Dr       ]

Birth Date      [16/09/1970]Gender
Address         [1233 Pretender Ave
[SUNNYVALE
[NSW
[
Country         [AU
Phone Number    [+61 3423 3245 ]
Mobile Number   [+61 419 467 293]
Email Address   [dave@foo.com

Terminal
Pay Summary Sick Leave Annual Leave Exit
View Pay Summary
Start Date      [14/04/1990]
Position        [Drummer Girl ]
Tax Number      [324234      ]
Salary/Wage     [ 210,000] [SAL]
Postcode [2433]

Pay Summary
Date            Amount
[17/04/2016] [ 210,000]
[26/03/2015] [ 202,000]
[05/05/2014] [ 196,000]
[16/08/2013] [ 190,000]

Sick Leave Balance [253.00]
Annual Leave Balance [164.00]

Sick          Annual
Date          Date
Adj           Balance Adj           Balance
[06/03/2017] [ 8.00] [ 253.00] [05/03/2017] [ 80.00] [164.00]
[29/10/2016] [ 8.00] [ 225.00] [02/02/2016] [ 80.00] [192.00]
[24/08/2016] [ 8.00] [ 240.00] [24/07/2015] [ 80.00] [178.00]
[12/05/2016] [ 8.00] [ 232.00] [30/06/2014] [ 80.00] [182.00]
```



Migrating to Genero

Initial migration – Genero Desktop Client

The screenshot displays two windows from the Genero Desktop Client. The 'Employees' window shows a list of employee details for Olga Francesco Grohl, including her name, birth date (16/09/1970), address (1233 Pretender Ave, SUNNYVALE, NSW), and contact information. The 'Employee Details' window provides a comprehensive view of her record, including her start date (14/04/1990), position (Drummer Girl), tax number (324234), and salary/wage (210,000 SAL). It also features two tables: 'Pay Summary' and 'Sick Leave', both showing a current balance of 253.0. The 'Annual Leave' table shows a current balance of 164.0. A 'View Pay Summary' button is located at the bottom of the 'Employee Details' window.

Employee Details

Start Date: 14/04/1990
Position: Drummer Girl
Tax Number: 324234
Salary/Wage: 210,000 SAL

Pay Summary

Date	Amount
17/04/2016	210,000
26/03/2015	202,000
05/05/2014	196,000

Balance: 253.0

Sick Leave

Date	Adjustment	Balance
06/03/2017	8.00	253.00
29/10/2016	8.00	225.00
24/08/2016	8.00	240.00
12/05/2016	8.00	232.00

Balance: 253.0

Annual Leave

Date	Adjustment	Balance
05/03/2017	80.00	164.00
02/02/2016	80.00	192.00
24/07/2015	80.00	178.00
30/06/2014	80.00	182.00

Balance: 164.0



Migrating to Genero

Final migration – Genero Desktop Client

The screenshot displays the Genero Desktop Client interface for an employee record. The main window is titled 'Employees2' and shows a list of employees on the left and a detailed view of the selected employee, Olga Grohl, on the right. The detailed view includes fields for Name, Personal Details, Contact Details, and a Dashboard with charts. A secondary window shows a 'Reviews' table with columns for Review Date and Reason. A third window shows a map of a street area.

Employees2 List:

No.	Surname	First
1	Grohl	Olga
2	Hendrix	James
3	Joplin	James
4	Simon	Paul
5	Nicks	Steph
6	Garfunkel	Arten
7	Carlisle	Belind
8	Mercury	Friede
9	Swift	Taylor
10	Bowie	David
11	Adelle	Adelle
12	Prince	Arbisi
13	Gaga	Lady
14	Presley	Kate
15	Perry	Kate
16	Springsteen	Bruce
17	Caruso	Madri
18	Page	James
19	Spears	Britne
20	Clapton	Eric
21	Bach	Johan
22	Handel	Georg
23	Boez	Joan
24	Lucas	Georg
25	Corey	Moral
26	Williams	Ralph
27	Lawrence	Jerrin

Employee Details (Olga Grohl):

- Name: First Name: Olga, Middle Name(s): Francesco, Surname: Grohl, Preferred Name: Vina, Title: Doctor
- Personal Details: Birth Date: 16/09/1970, Gender: Female
- Contact Details: Address: 1233 Pretender Ave, SUNNYVALE, NSW, Australia, Postcode: 3433, Phone Number: +61 3423 3245, Mobile Number: +61 419 467 293, Email: dave@foo.com

Reviews Table:

Review Date	Reason
12/12/2017	Anger Management
01/08/2017	Annual Review, plan for next album and road tour
01/04/2017	Disciplinary action for drumming in unauthorised
02/08/2016	Annual Review, new album well received
29/07/2015	Annual Review, pay increase April 2016
11/11/2014	Interview for promotion to Lead Singer
05/05/2014	Review and agreed on new KPIs
02/07/2013	Review performance, new album reviews were good

Dashboard (24 - 30 Aug 2018):

- Steps: 33,387 (Goal: 5,565)

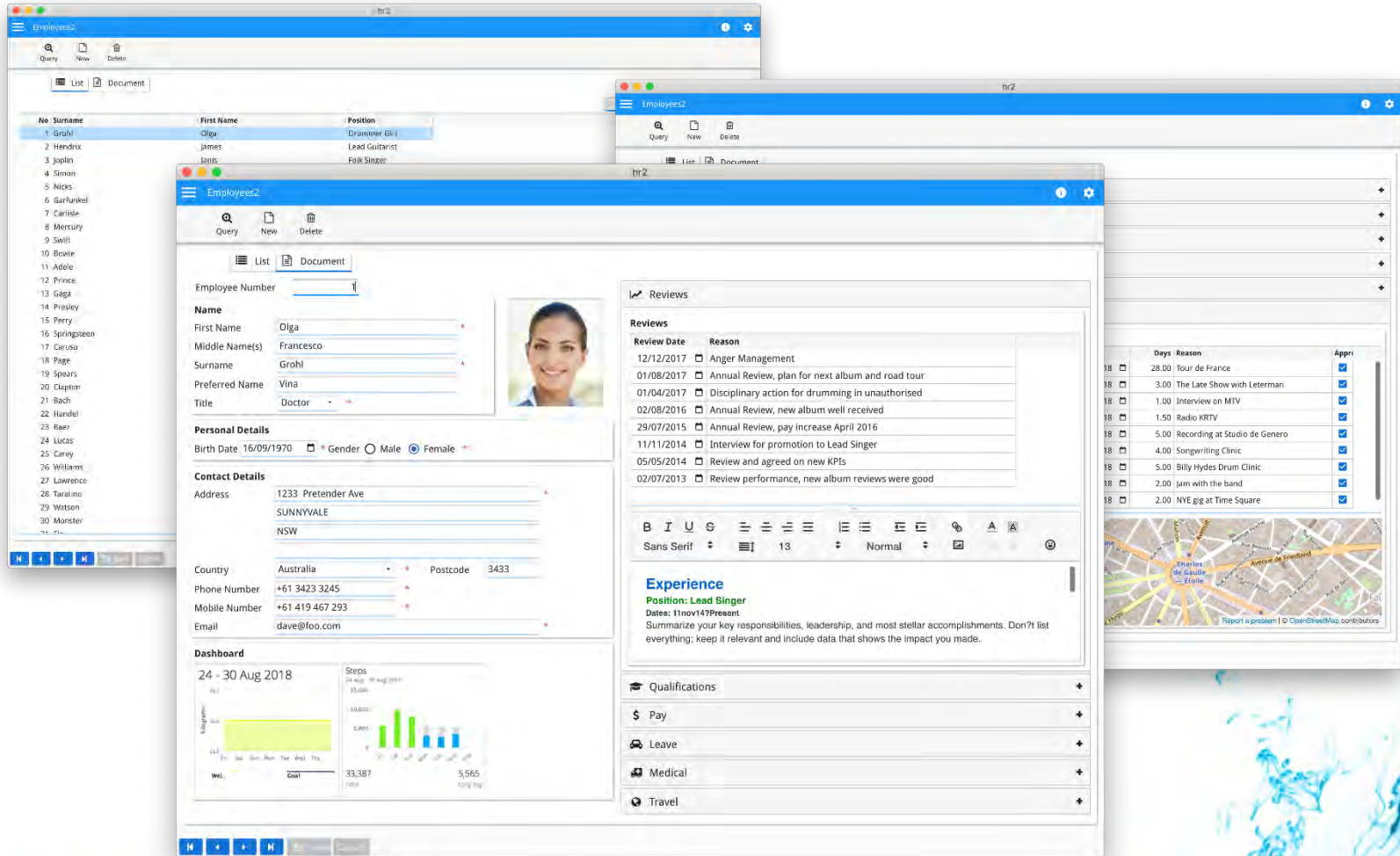
Experience Section:

- Position: Lead Singer**
Dates: 11nov14?Present
Summarize your key responsibilities, leadership, and most stellar accomplishments. Don't list everything; keep it relevant and include data that shows the impact you made.
- Position: Drummer**
Dates: 02jul13-10nov14
Think about the size of the team you led, the number of projects you balanced, or the number of articles you wrote.
- Education**
Doctorate Degree / 12jan11
School of Rock



Migrating to Genero

Final migration – Universal Rendering & Browser Client



Migrating to Genero

Be responsive to change

'It is **not the strongest**
of the species that survives
nor the **the most intelligent**,
but the one most

responsive to change'

Charles Darwin

The Origin of Species, 1859



Migrating to Genero

Migration Work

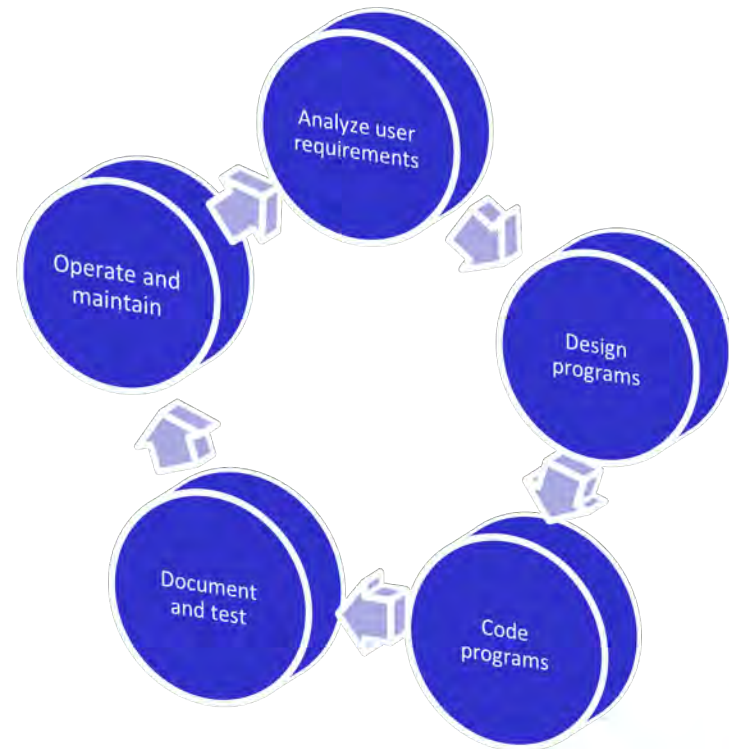


FOUR Js
The Power of Simplicity

Migrating to Genero

Migration Work

- **Allows a step by step migration**
 - Tune your migration to your needs
 - After each iteration, one working application
 - First iteration: 'recompile and go'

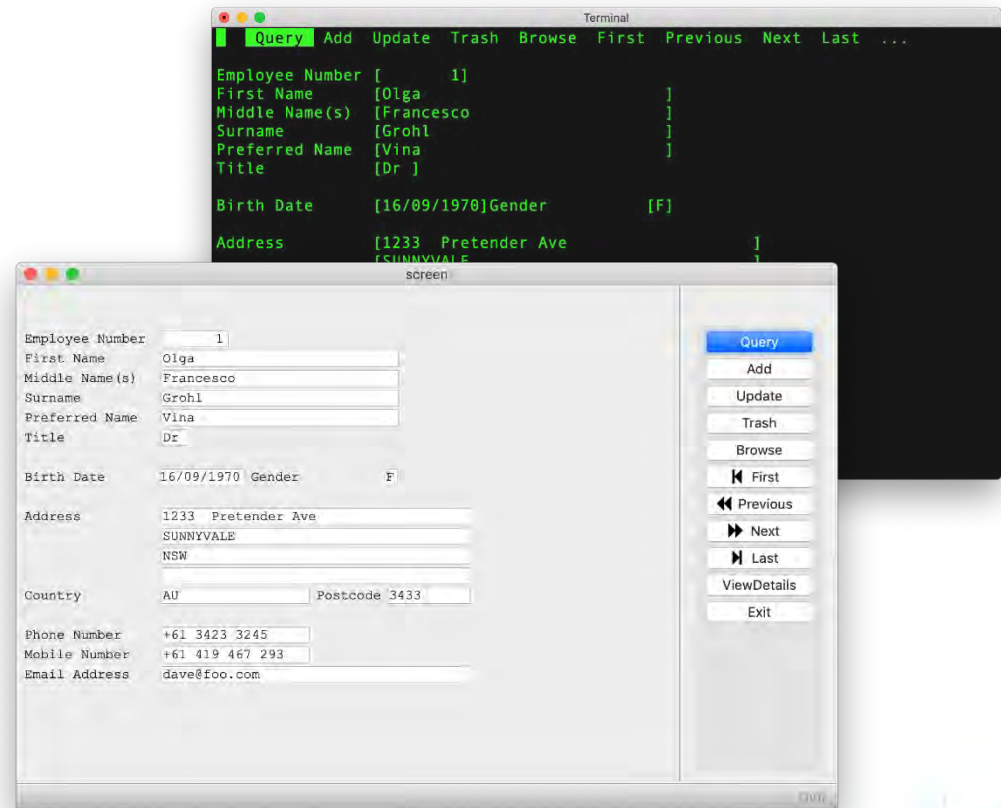


Migrating to Genero

Migration Work

➤ Migration step 1

- Install Genero Studio
- Define your project
- Compile & validate
 - Strict function signature
 - Review C routines
 - Review file statements
 - Review TUI specifics
 - Rewrite SQL Blocks
 - ...
- Step one completed – Application can be deployed



Migrating to Genero

Migration Work

➤ Migration step 2

- Review Windows that includes more than one form
- Replace static displays statements with something more accurate
- Design forms in a more graphical way
- Compile & Validate
- Step two completed – Application can be deployed

The screenshot displays a web application interface for managing employee records. The main window, titled "Employees", shows a form for editing an employee's details. The form is divided into several sections: "Name", "Personal Details", "Contact Details", "Sick Leave", and "Annual Leave".

Name Section:

- Employee Number: 1
- Name: Olga
- Middle Name(s): Francesco
- Surname: Grohl
- Preferred Name: Vina
- Title: Doctor

Personal Details Section:

- Birth Date: 16/09/1970
- Gender: Male
- Marital Status: Married

Contact Details Section:

- Address: 1233 Pretender Ave, SUNNYVALE, NSW
- Country: Australia
- Postcode: 3433
- Phone Number: +61 3423 3245
- Mobile Number: +61 419 467 293
- Email Address: dave@foo.com

Sick Leave Section:

Date	Days	Amount
17/04/2016		
26/03/2015		
05/05/2014		

Annual Leave Section:

Date	Days	Amount
06/03/2017	8.00	253.00
29/10/2016	8.00	225.00
24/08/2016	8.00	240.00
12/05/2016	8.00	232.00

Summary:

- Sick Leave Balance: 253.0
- Annual Leave Balance: 164.0

The interface also includes a sidebar with navigation buttons: Query, Add, Update, Trash, Browse, First, Previous, Next, Last, ViewDetails, and Exit.

Migrating to Genero

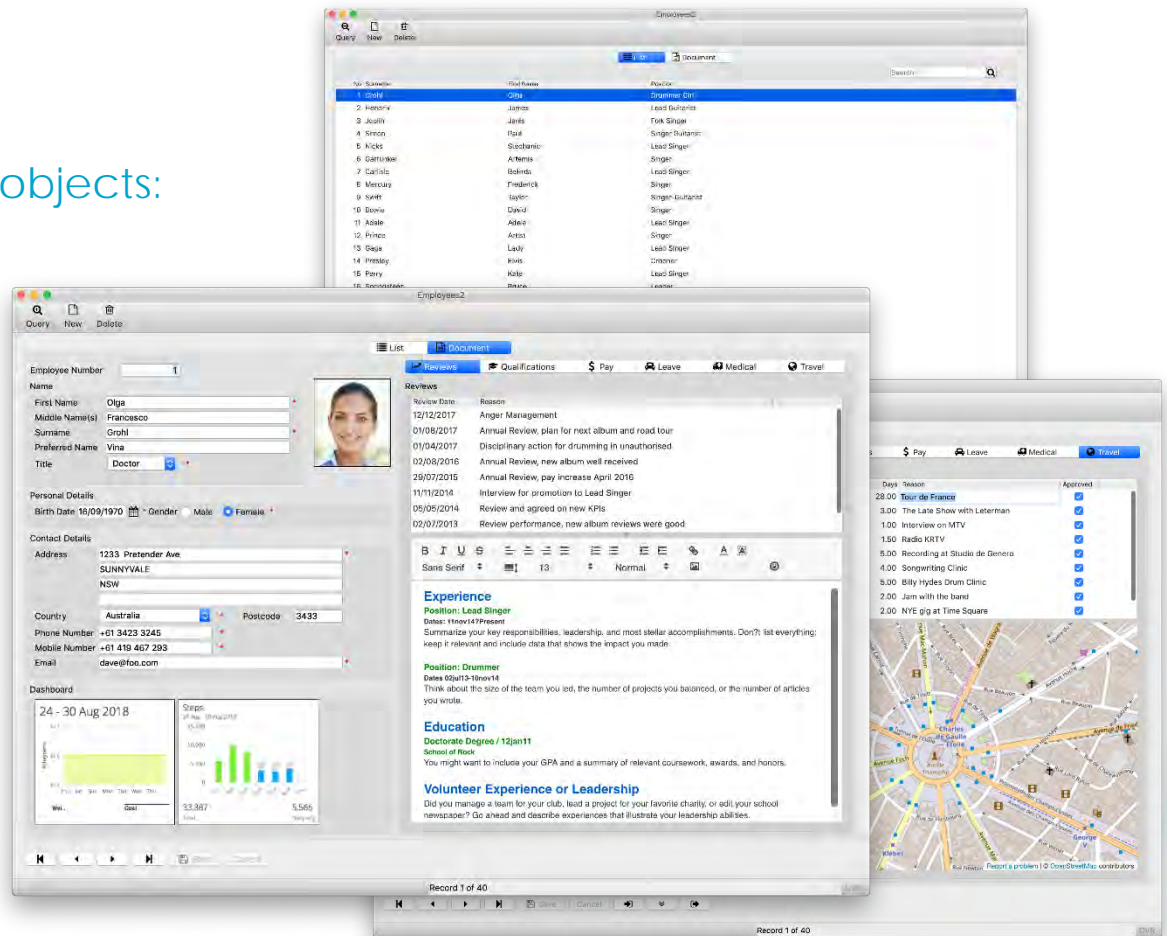
Migration Work

➤ Migration step 3

➤ Add new graphical objects:

- Widgets,
- Toolbars,
- Topmenus,
- Multiple dialogs,
- Tree views,
- Web Components ...

➤ Add localization

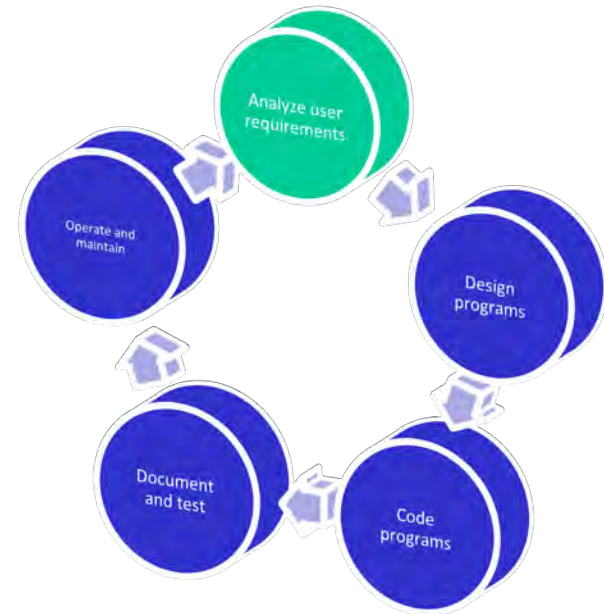


Migrating to Genero

Migration Work

➤ Migration considerations

- Set customers' expectation
- Scope of the project
- Current workload
- Resources
- Priorities
- Cost / ROI / Gains



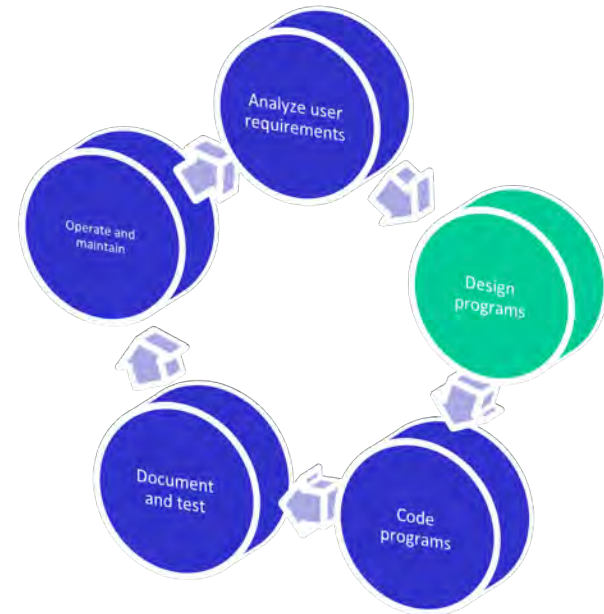
IBM I4GL to Genero

Migrating to Genero

Migration Work

➤ Design Programs

- GDC only, GWC only or both GDC and GWC
- Which database engine
- Which platform
- 1:1 migration or enhanced migration
- Add new features

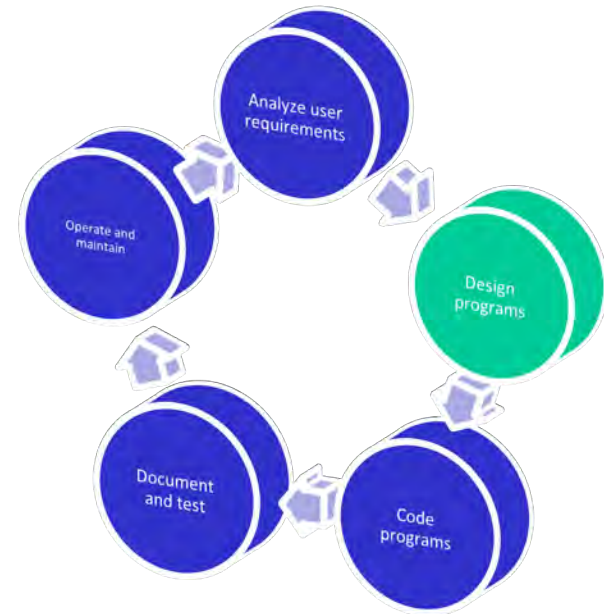


Migrating to Genero

Migration Work

➤ Review Programs

- Review user made C functions, rewrite them with Genero classes/methods
- Review windows with multiple forms
- Review Display At Statements
- Review ARR_CURR() and SCR_LINE() functions
- Strict function signature checking
- Review form files
 - Remove ASCII/TERMCAP semi graphic characters
 - Enhance most used forms
 - Review master/Detail forms
 - Review subscripted form fields
 - Align placeholders where needed
- Review Screen Arrays
- Centralize action attributes with .4ad
- Define styles

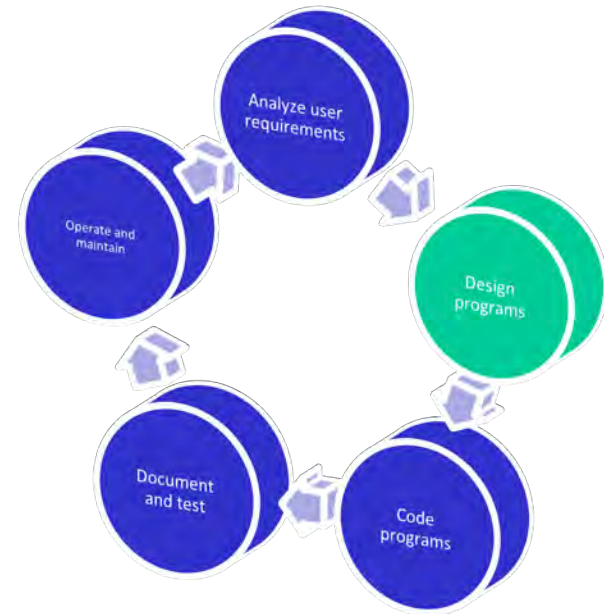


Migrating to Genero

Migration Work

➤ Review Programs

- Review global variables, check for type mismatch
- Consider swapping On Key and Command for On Action
- Consider Dynamic Arrays
- Consider Multiple Dialogs
- Consider using String vs Char / Varchar
- Review your menus
 - Use Scroll Menus,
 - Toolbars,
 - Contextual menus, ...
- Review Clear Screen statement



Migrating to Genero

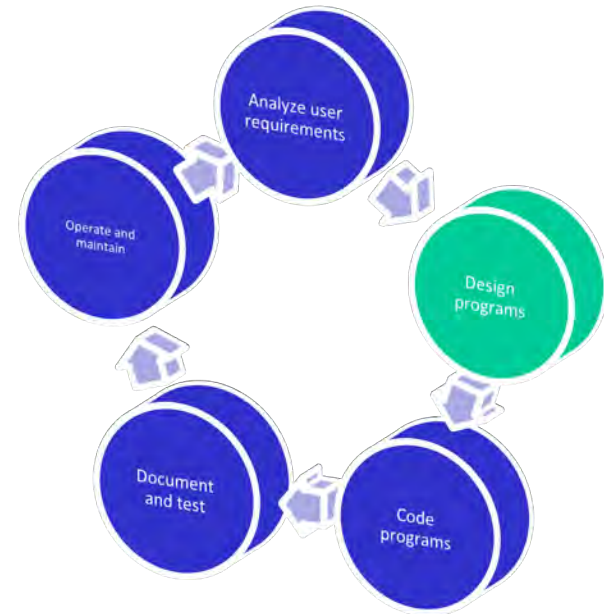
Migration Work

➤ Summary

- Review form files
- Correct compilation errors
- Add new graphical functionalities

➤ No need to

- Review your entire code
- Do all points listed in one step



Migration to Genero

Case Studies



FOUR Js
The Power of Simplicity



Migrating i4GL

➤ ADAPTRIS. Project 1

➤ Goal

- Migration from I4GL to Genero
- No Improvement of the user interface
- No new functionalities
- Future development performed by customer

➤ Metrics

- 1 174 100 lines of code
- 625 form files
- 2 developers

Migration: 3 weeks



Migrating i4GL

➤ ADAPTRIS. Project 2

➤ Goal

- Migration from I4GL to Genero / GDC
- Improvement of the user interface
- Add new functionalities
- Future development performed by the customer

➤ Metrics

- 574 684 lines of code
- 242 form files
- 2 developers

Migration: 1 months



Migration to Genero

➤ SIGEA. Sistema Integral de Gestión Económica del Aire (Spanish Air force)

➤ Goal

- Migration from BDS to Genero / GDC
- Change of Database engine
- Improvement of the user interface
- Add new functionalities
- Be multi-platform

➤ Metrics

- 3 095 633 lines of code
- 2 465 form files
- 8 developers

Migration: 11 months



Migration to Genero

➤ Gestevision Telecinco (Channel TV)

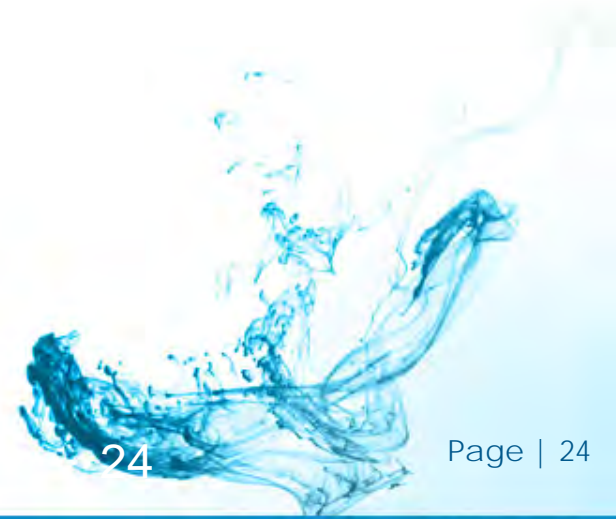
➤ Goal

- Migration from I4GL to Genero
- Improvement of the user interface
- Add new functionalities

➤ Metrics

- 207 175 lines of code
- 344 form files
- 2 developers

Migration: 4 months



Migration to Genero

➤ Si-NET (Software company)

➤ Goal

- Migration from I4GL to Genero
- Improvement of the user interface
- Add new functionalities

➤ Metrics

- 32 000 lines of code
- 60 form files (30 500 lines of code)
- 1 developers

Migration: 3 months



Thank You



FOUR Js
The Power of Simplicity



Backup



FOUR Js
The Power of Simplicity





History of programming Languages

