

 The full stack modernization framework

SmartComponent Library

by Consultingwerk

Mike Fechner

- Director, Lead Modernization Architect and Product Manager, Architect of the SmartComponent Library and WinKit
- Specialized on object-oriented design, software architecture, desktop user interfaces and web technologies
- 30 years of Progress experience (V5 ... OE12)
- Active member of the OpenEdge community
- Frequent speaker at OpenEdge related conferences around the world



Consultingwerk Software Services Ltd.

- Independent IT consulting organization
- Focusing on **OpenEdge** and **related technology**
- Located in Cologne, Germany, subsidiaries in UK, USA and Romania
- Customers in Europe, North America, Australia and South Africa
- Vendor of developer tools and consulting services
- Specialized in GUI for .NET, Angular, OO, Software Architecture, Application Integration
- Experts in OpenEdge Application Modernization



Services Portfolio, Progress Software

- OpenEdge (ABL, Developer Tools, Database, PASOE, ...)
- Telerik DevCraft (.NET, Kendo UI, Angular, ...), Telerik Reporting
- OpenEdge UltraControls (Infragistics .NET)
- Telerik Sitefinity CMS (incl. integration with OpenEdge applications)
- Kinvey Plattform, NativeScript
- Corticon BRMS
- Whatsup Gold infrastructure-, network- and application monitoring
- Kemp Loadmaster
- ...

Services Portfolio, related products

- Protop Database Monitoring
- Combit List & Label
- Web frameworks, e.g. Angular
- .NET
- Java
- ElasticSearch, Lucene
- Amazon AWS, Azure
- DevOps, Docker, Jenkins, ANT, Gradle, JIRA, ...
- ...

Agenda

- **Overview**
- Framework Backend Architecture
- OpenEdge GUI for .NET Frontends
- Kendo UI and Angular Frontends
- NativeScript Clients
- Repository based cross platform UI
- Application Modernization



At a glance

- Full stack modernization framework
- Backend as home for business logic
- Relational and object-relational (ORM)
- RESTful out of the box
- Multiple user interface options: Desktop, Web and Mobile
- Application Framework: Authentication, Localization, Menu, Workflows, ...
- Integration with existing OpenEdge applications and frameworks
- Modernization tooling: Analyze and migrate existing source-code

At a glance

- No vendor lock-in: full source code provided to customers
- Future proof: ahead the demands of our customers
- Designed for customizability and extensibility: No customer has the same requirements
- DevOps enabled: templates for build, test and deploy
- Supported on OpenEdge 11.7, 12.2 and 12.7

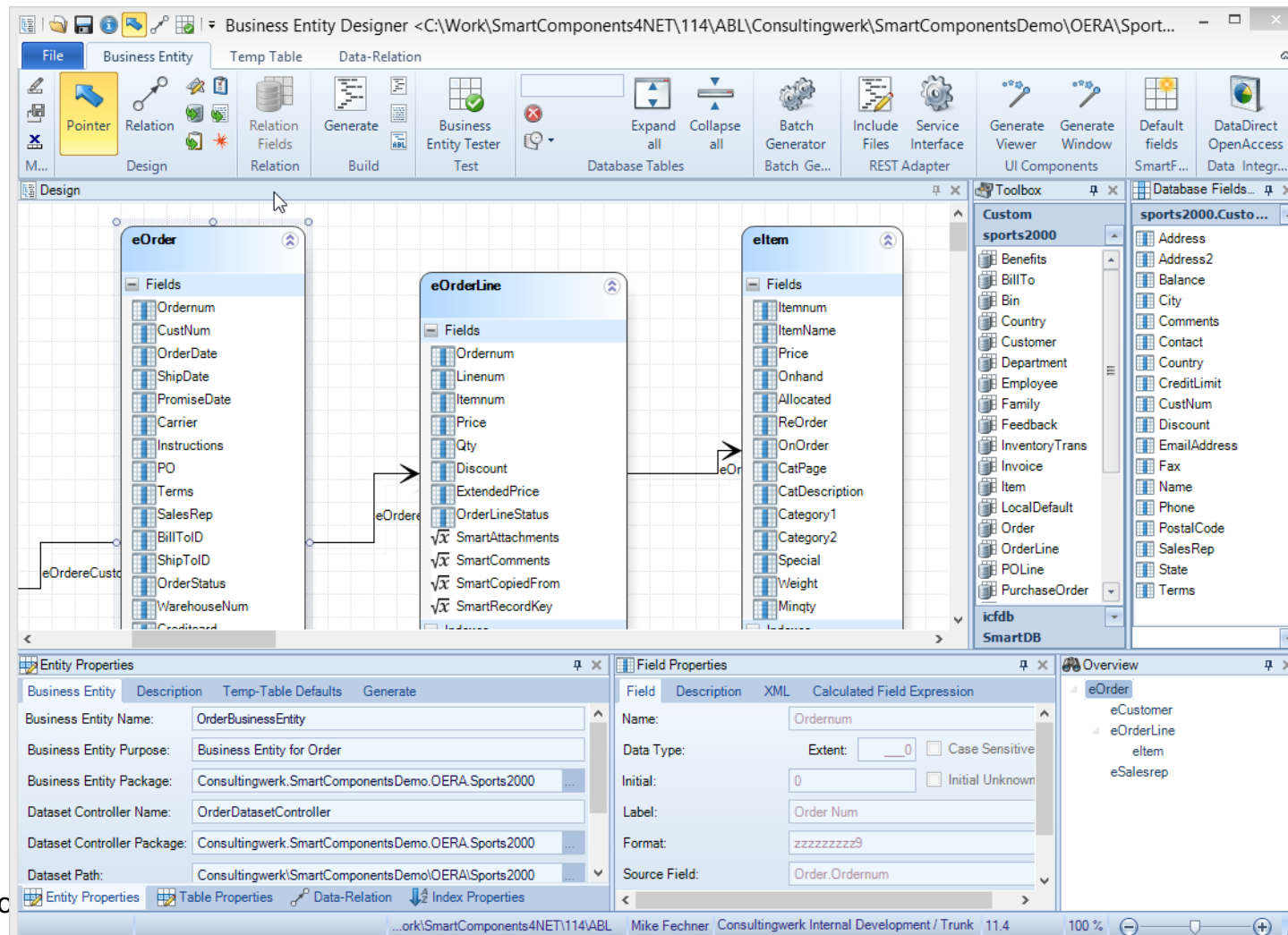
Application Framework Features

- Authentication, including client-principal support, Authentication Gateway and multi-tenancy
- Flexible authorization (menu, toolbar, business logic, custom tokens, ...), can be used for data-related authorization (e.g. Regions)
- Localization (full UI translation), messages, application data
- Definition based referential integrity
- Batch scheduler (repeating, just once, run now)
- Enhanced Unit testing framework
- ...

Backend Architecture

- Backend central component of modern architecture
- Backend responsible for reuse of business logic, future proofness
- Service oriented, OpenEdge Reference Architecture, Common Component Specification
- **Tool support** during development of Business Entities, Business Tasks and application services
- Relational and object-relational (ORM)
- Modular framework architecture
- RESTful out of the box

SmartComponent Library



Demo

- Build Customer Business Entity
 - Validation
 - Calculated Field
- Business Entity Tester
- Use DatasetModel to access Business Entity

User Interface Flexibility

- Windows Desktop User Interfaces with .NET (GUI for .NET or .NET pure)
- Web applications (Angular, Kendo UI)
- Mobile apps (Angular, NativeScript)
- .NET Razor/Blazor
- Open Interfaces (e.g. RESTful), fully „headless“ applications
- Partner User Interfaces



Kendo UI
THE ART OF WEB DEVELOPMENT



User Maintenance

SmartFramework

Navigation: Erster Datensatz, Vorheriger Datensatz, Nächster Datensatz, Letzter Datensatz

Maintenance: Hinzufügen, Ändern, Speichern, Abbrechen, Kopieren, Löschen

Copy Security Assignment, Security Assignment

Login Company Name: [Dropdown]

User Name	Full Name	Email	Security Id	Language Name	Ma
[checkbox]					
+ Login Company Name : (2 items)					
- Login Company Name : Consultingwerk Ltd. (7 items)					
User Name	Full Name	Email	Security Id	Language Name	Ma
demo	Demo User	demo@consulti...	200	English	Ma
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mikefe	Mike Fechner	mike.fechner@c...	301	Deutsch	
oana	Oana Sucigan	oana.sucigan@...	306	English	
radu	Radu Nicoara	radu.nicoara@c...	305	English	
richard	Richard Kelters...	r.kelters@flusso...	304	Dutch	Mil
robert	Robert Chelaru	<robert.chelaru...	307	English	Ra
+ Login Company Name : Demo Company (1 item)					

User | Group assignment

Name: mikefe

Login Company: Consultingwerk Ltd. ...

Language: DE ... Deutsch

Full Name: Mike Fechner

Email: mike.fechner@consultingwerk.de

Password: [Empty]

Password ChangedDate: 26.02.2021

Last Login: 04.29.2021 12:41:58

Manager: [Empty] [Empty]

User Security Id: [Empty] 301 Required to enabled Spring-framework based AppServer Authentication (REST)

- << **Consultingwerk**
software architecture and development
- 🔑 Authentication & Authorization ▾
- 📅 Field Security Item Maintenance
- 🔑 Security Assignment
- 🔑 Security Assignment Verification
- 🔑 Menu Security Maintenance
- 📄 Security Mass-Assignment
- 📄 Security Object Maintenance
- 🔒 Security Realm Maintenance
- 📄 Security Token Maintenance
- 👤 Verwaltung Benutzer
- 👤 Add User
- 👤 Verwaltung Benutzergruppen
- 🔑 Web Sessions
- 📄 Menu >
- 📄 Scheduler >
- 🌐 System >

👤 User Maintenance

User N...	Login Company Name	Full Name	E-mail
admin		Default Admin User	
demo	Consultingwerk Ltd.	Demo User	demo@consultingwerk.de
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marko	Consultingwerk Ltd.	Marko Rüterbories	marko.rueterbories@cons
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root		System Administrator	root@root.com

👤 USER **👤 GROUP ASSIGNMENT**

ADD COPY SAVE CANCEL DELETE COPY SECURITY ASSIGNMENT

Name *
lutz

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Language
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Full Name
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E-mail
lutz.fechner@consultingwerk.de

Password

Password Changed Date
year-month-day 📅

Last Login
year-month-day 📅

Manager

Demo

- UI Generation from Business Entity Designer
- Launch generated screen in GUI and Web
- Repository Designer Tools

Client Logic

```
protected override subscribeEvents() {  
    const customerDataSource = this.dsRegistry.getDataSource('CustomerDataSource');  
    const customerViewer: SmartViewerComponent = this.viewerRegistry.getSmartViewer('CustomerViewer') as any;  
  
    customerDataSource.selectionChanged.subscribe(() => this.setStateInputSensitivity());  
    customerDataSource.stateChanged.subscribe(() => this.setStateInputSensitivity());  
  
    customerViewer.inputValueChanged.subscribe((ev: InputChangedEventArgs) => {  
        if (ev.inputId === 'Country') {  
            this.setStateInputSensitivity();  
        }  
    });  
}
```

Client Logic

```
private setStateInputSensitivity() {  
  setTimeout(async () => {  
    const customerCountryInput = await this.widgetFactory.GetFacade(  
      "CustomerViewer.eCustomer.Country"  
    );  
    const customerStateInput = await this.widgetFactory.GetFacade(  
      "CustomerViewer.eCustomer.State"  
    );  
  
    if (customerCountryInput.SCREEN_VALUE) {  
      customerStateInput.SENSITIVE =  
        customerCountryInput.SCREEN_VALUE.toUpperCase() === "USA";  
    } else {  
      customerStateInput.SENSITIVE = false;  
    }  
  });  
}
```

Application Framework Features

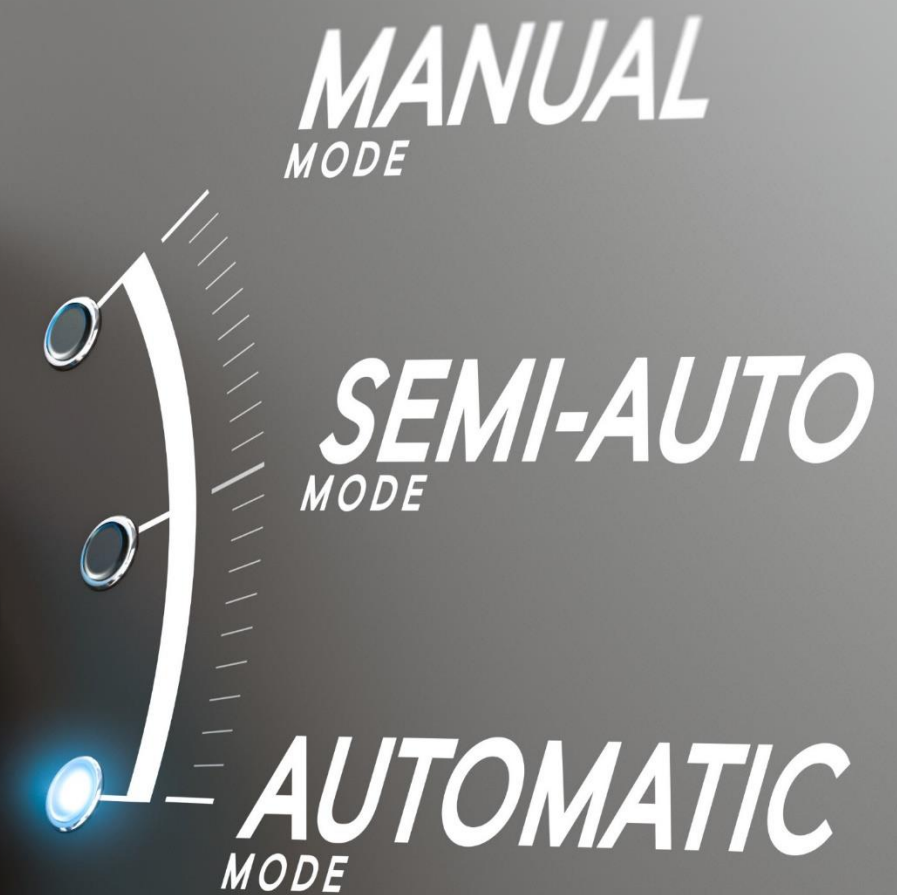
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Security related features

- PASOE Spring Framework, TLS
- Client-Principal Support / Auditing / Multi-Tenancy
- Flexible authentication options (Application, DB, SSO, OAuth2)
- Flexible authorization options
 - Menu, launching of screens, toolbar buttons
 - Access to Backend functions (e.g. CRUD methods)
 - Field level security (read, update)
 - Custom Application functions (token, object-level tokens)
 - Application Data (e.g. region)

SmartComponent Library

- “Eat your own dog food“
- Most of our tools are written using our own libraries and tools
- Nearly 100% ABL, 100% OpenEdge
- **Full source code** shipped to customers
- Typically, weekly releases (40-45 releases/year)
- Technical support and maintenance offerings
- Support strategy for OpenEdge LTS (11.7, 12.2) and new feature releases (currently 12.3, 12.4 in preparation)



Migration tools

Migration tools

- Analysis of existing source code based on ProParse (TTY, GUI)
- Adaptable to patterns of the existing application
- Discovery of relevant business logic
- Separation of business logic from UI logic
- Combination of business logic from multiple screens into central business logic objects (e.g. Validator)
- Transfer of UI logic into cross-platform APIs
 - UI control, e.g. access to fields, enable, disable, colors
 - User messages
- Various API's supporting code migration

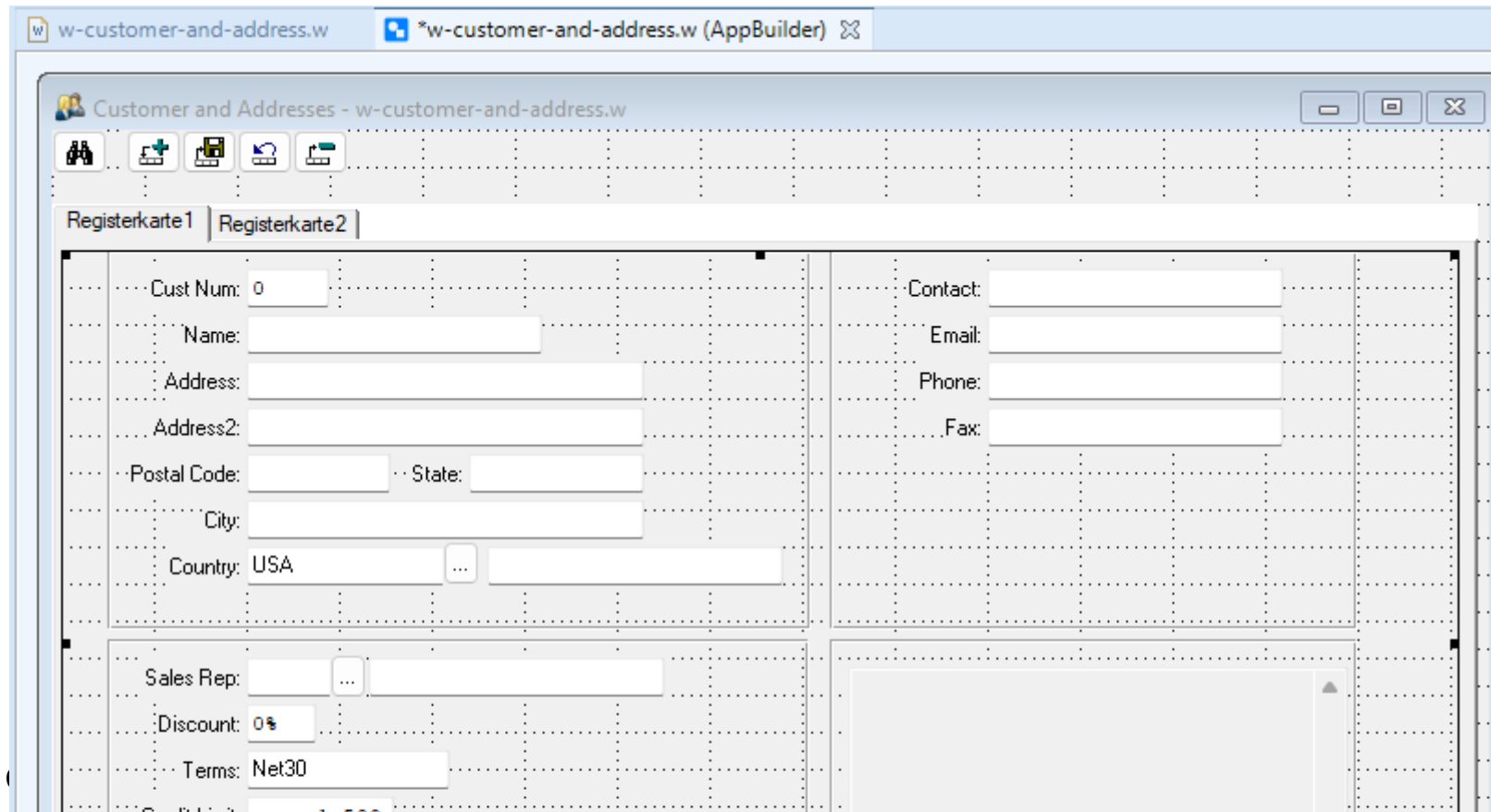
Migration from Legacy-developer frameworks

- Migration tools and compatibility components
- Migration of UI layout (code or repository) and frontend and backend logic
- Successful migration projects for
 - Progress Dynamics
 - ADM1/ADM2
 - DWP (Dynamic WebClient Platform)
 - ProShield (in preparation), close cooperation with original framework developer



Demo

- Migration of GUI application (AppBuilder, no ADM)



Demo

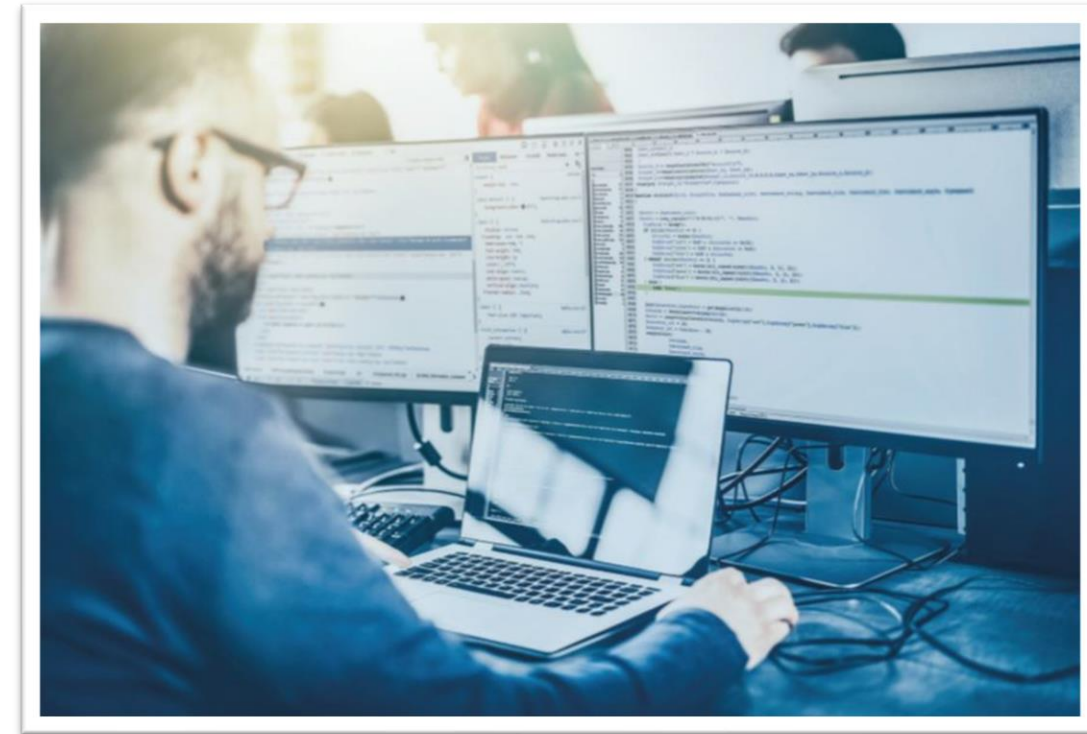
- Migration of TTY style application with UPDATE EDITING Block

```
Customer entry
Cust Num: 1
  Name: Lift line skiing Ltd
  Address: Unter Käster 1
  Address2:
  City: Köln
Postal Code: 50667
  Country: USA United States of America
Sales Rep: DOS Donna

Please enter the appropriate Postal Code.
```

SmartComponent Library Training

- 28. Nov – 02. Dec 2022
- 5 days instructor led online training
- Backend and Frontend
- In cooperation with Progress Software



Questions

- Email us at info@consultingwerk.com



