



UNIFACE

Dev Conf



Uniface Mobile: Offline Apps

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Face to Face Voorjaarsconferentie 2017, June 14



Agenda

- ▲ Enterprise mobile apps based on DSP technology
- ▲ Offline storage and execution – mobile POC COAMO
- ▲ Tipps & tricks
- ▲ Demo



Uniface Mobile

- ▲ Enterprise mobile apps
 - ▲ Mobile app that interfaces with enterprise systems
 - ▲ Need to work with large scale enterprise databases
 - ▲ Local store of data
 - ▲ Longer life than typical consumer apps
 - ▲ Dealing with device and platform fragmentation (BYOD)
 - ▲ Easy and flexible deployment
 - ▲ Security
 - ▲ Offline Execution



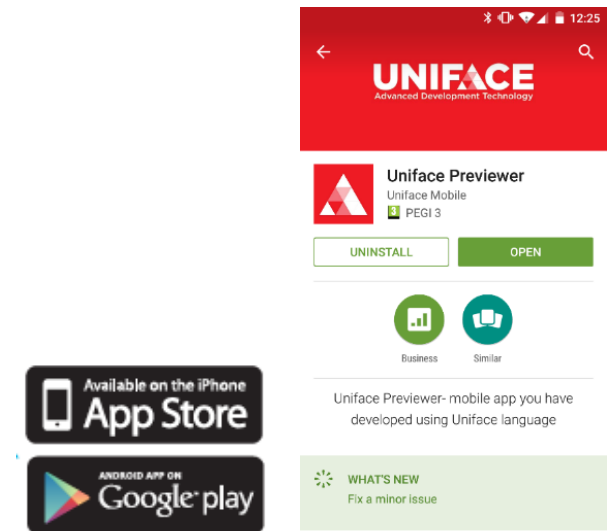
Uniface Mobile

- ▲ Use the strength of Uniface for mobile
 - ▲ Development and maintenance efficiency
 - ▲ Platform independence
 - ▲ Scalability
 - ▲ Stability and longevity
 - ▲ Integration capabilities
 - ▲ Mobile specific



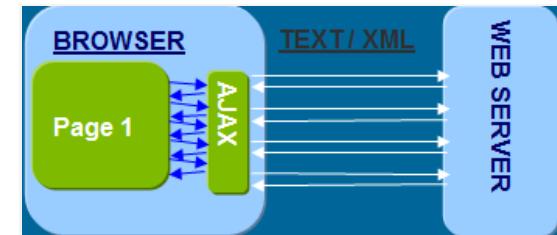
Uniface Mobile

- ▲ Hybrid Solution – DSP/HTML5/CSS/JavaScript
- ▲ Develop and deploy cross-platform
- ▲ Access of device features through Cordova
- ▲ Rapidly prototype mobile apps
- ▲ Previewer app for developer test on mobile devices (available in appstores)
- ▲ Build service for mobile deployment



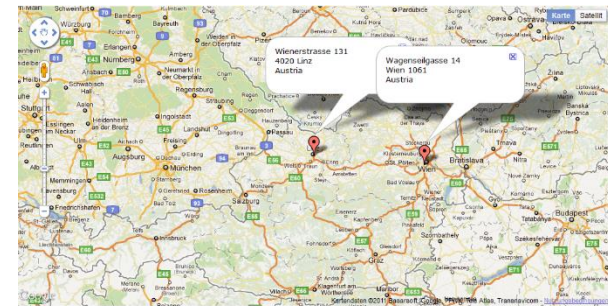
Uniface Dynamic Server Pages

- ▲ Server-side ProcScript code
- ▲ Standard web front-end technologies
 - ▲ HTML/CSS/JavaScript
 - ▲ JavaScript API
 - ▲ Bi-directional invocation
 - ▲ Asynchronous activation (Promises = Synchronous)
 - ▲ HTML 5 Widgets
- ▲ Browser/Server Synchronisation
 - ▲ Automatic
 - ▲ Optimised
 - ▲ Secure
 - ▲ Prevents Race Conditions



Uniface Javascript API

- ▲ Access Uniface browser objects from Javascript
- ▲ Dynamic modification of frontends
- ▲ User interface logic
- ▲ Data validation
- ▲ Integration with other web technology
- ▲ Offline execution
- ▲ Usage of Cordova plugins for mobile



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Requirements for Offline Apps

- ▲ Download data from enterprise DB
- ▲ Store data on the client device
- ▲ Work with local data only
- ▲ Synchronize local changes with enterprise DB
- ▲ Start and execute offline



Uniface Mobile POC

- ▲ COAMO Agroindustrial Cooperative
- ▲ Located in Campo Mourão, Paraná, Brazil
- ▲ 7000 employees, 28000 associates
- ▲ 500 mio ha farmland
- ▲ Main products: soybeans, wheat, coffee
- ▲ Revenue: 10 Billion EUR

<http://www.coamo.com.br>



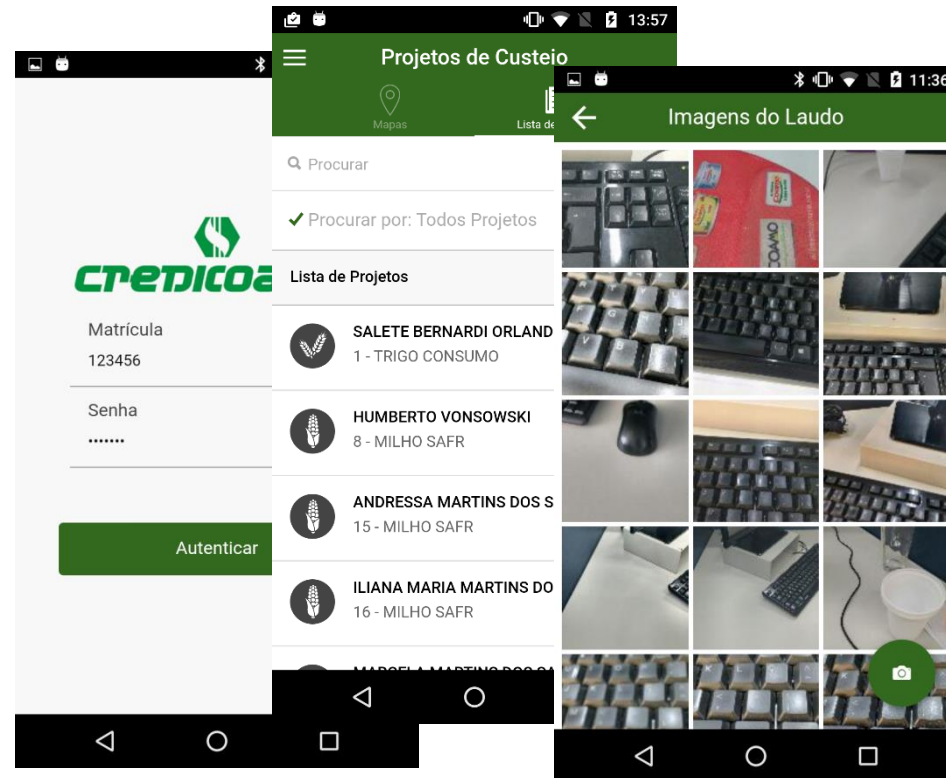
Uniface Mobile POC - Requirements

- ▲ Application for insurance agents
- ▲ Main parts should work offline
- ▲ Download and store insurance data on the mobile device
- ▲ Work with offline data including photos
- ▲ Upload local changes to central db
- ▲ Existing Uniface application provides insurance data



Uniface Mobile POC - Existing Mobile Apps

▲ Built with IONIC framework



Uniface Client Side Data Storage

- ▲ Get and set data from / to DSP
 - ▲ `uniface.Instance.getData()`
 - ▲ `uniface.Instance.setData()`
- ▲ Support for browser based databases (PouchDB)
 - ▲ `uniface.datastore.put()`
 - ▲ `uniface.datastore.get()`



Local Store of DSP Data

```
var dspData = uniface.getInstance("ACME_DSP").getData();

uniface.datastore.get("ACME_DSP").then(function (doc) {

    uniface.datastore.remove(doc).then(function (del) {

        uniface.datastore.put({
            id: "ACME_DSP",
            dspData: dspData
        }).then (function (put1) {
            ..... /* prepare some display */ ....
        });

    });

});

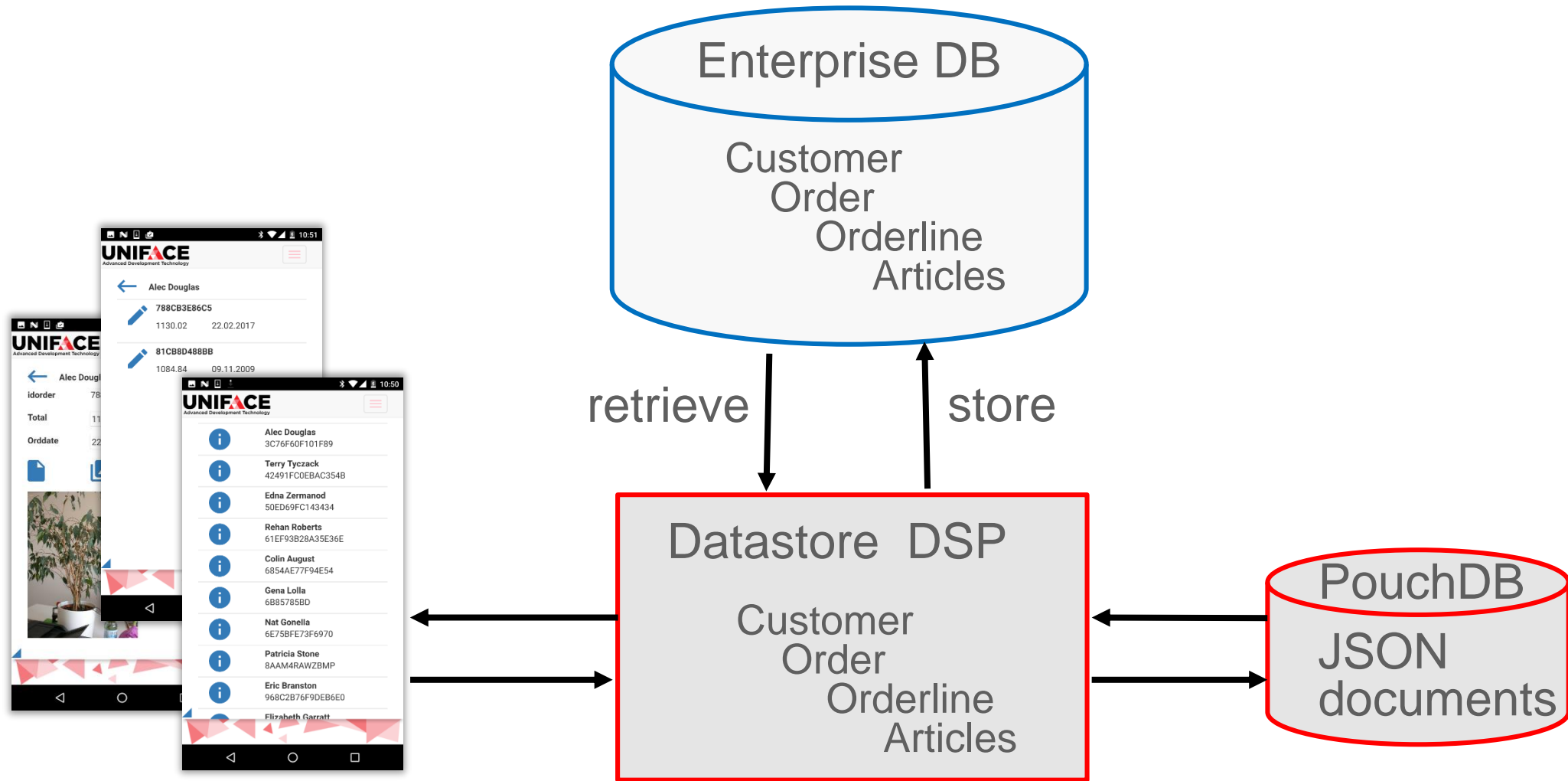
}).catch(function (errGet) {
    uniface.datastore.put({
        id: "ACME_DSP",
        dspData: dspData
    }).then (function (put2) {
        ..... /* prepare some display */ ....
    });

});

});
```



Uniface Offline Apps



Offline Execution



▲ Usage of HTML5 Application Cache

▲ Manifest file lists all resources to be cached by the browser

▲ Referenced in starting DSP

```
▲ <html  
  manifest="/MobileWorkshop/acme_main.appcache">
```



HTML5 Manifest File

```
CACHE MANIFEST
# Version 1.18

CACHE:
# start-up screens
/MobileWorkshop/wrd/ACME_MAIN

# Uniface CSS
/MobileWorkshop/css/udsp.css
...

# Uniface JavaScript
/uniface/common/pouchdb.js
/uniface/common/uniface.js
....
```



HTML5 Manifest File

```
# Uniface Images
/uniface/common/images/ubusyindicator/processing.gif
.....

# App Javascript
/MobileWorkshop/bootstrap-3.3.7-dist/js/bootstrap.min.js
.....

# DSP JavaScript
/MobileWorkshop/dspjs/acme_main.js
/MobileWorkshop/dspjs/acme_login.js
.....

# App Images
/MobileWorkshop/img/footer.png
/MobileWorkshop/img/UnifaceLogo.png
... .
```



HTML5 Manifest File

```
# CSS
/MobileWorkshop/bootstrap-3.3.7-dist/css/bootstrap.min.css
/MobileWorkshop/css/ACME.css
...
# App Javascript
/MobileWorkshop/jquery/1.12.4/jquery.min.js
....
NETWORK:

FALLBACK:
/MobileWorkshop/material-design-iconic-font/css/material-
design-iconic-font.min.css /MobileWorkshop/material-design-
iconic-font/css/material-design-iconic-font.min.css
.....
```



DSP Instantiation in the Starting DSP

```
operation exec
```

```
public web
```

```
; activate all DSPs for offline mode (can only be done in the  
starting DSP)
```

```
activate "ACME_LOGIN"
```

```
activate "ACME_DSP"
```

```
activate "ACME_LIST"
```

```
activate "ACME_ORDERS"
```

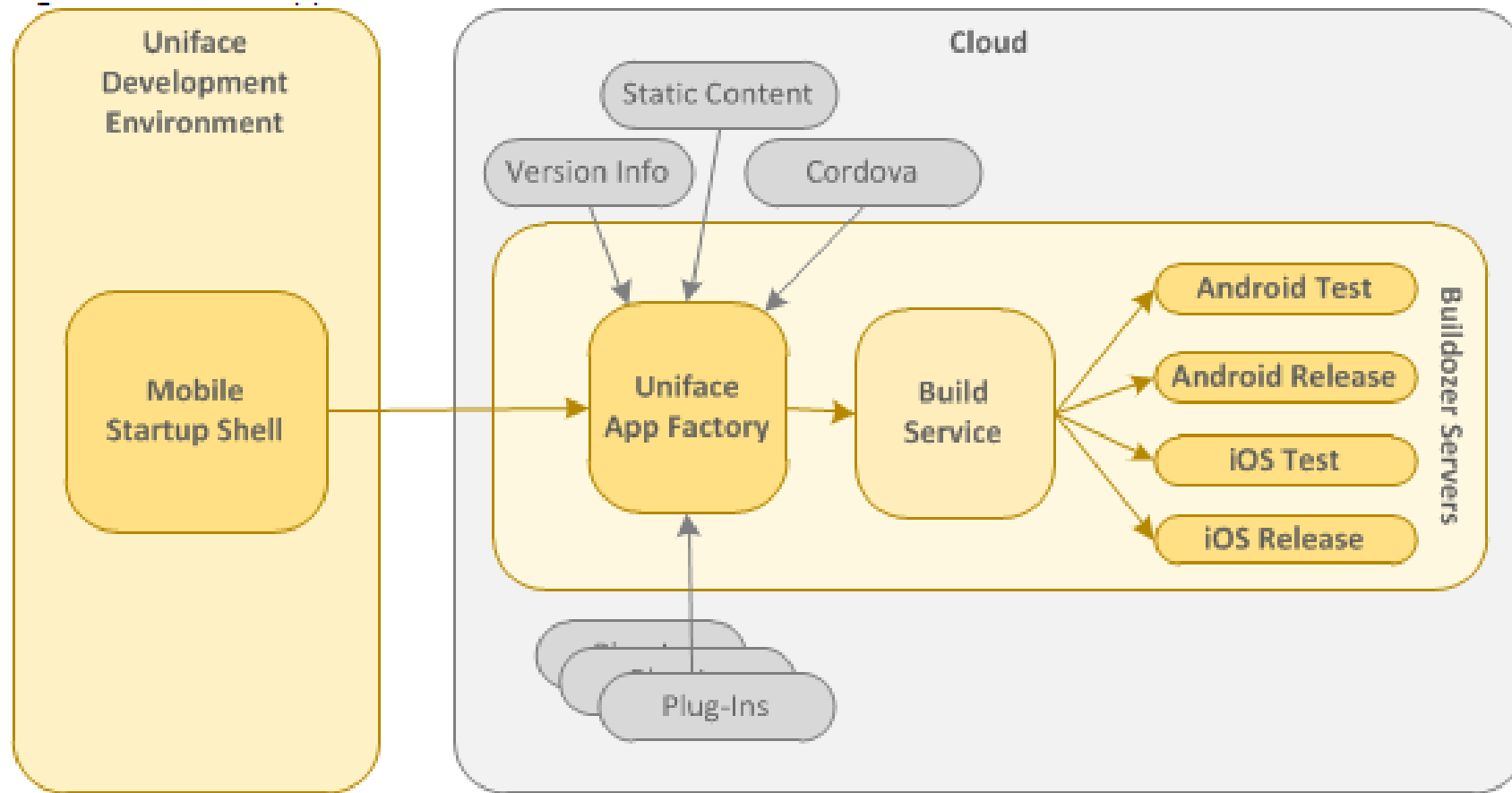
```
activate "ACME_ORDER_EDIT"
```

```
... .
```

```
end
```



Mobile Deployment Process



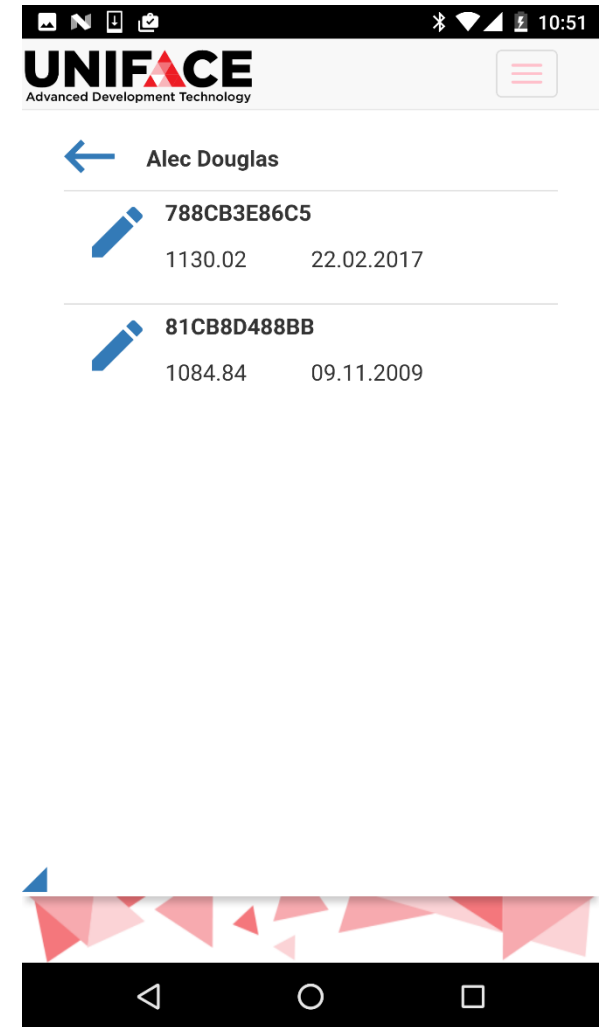
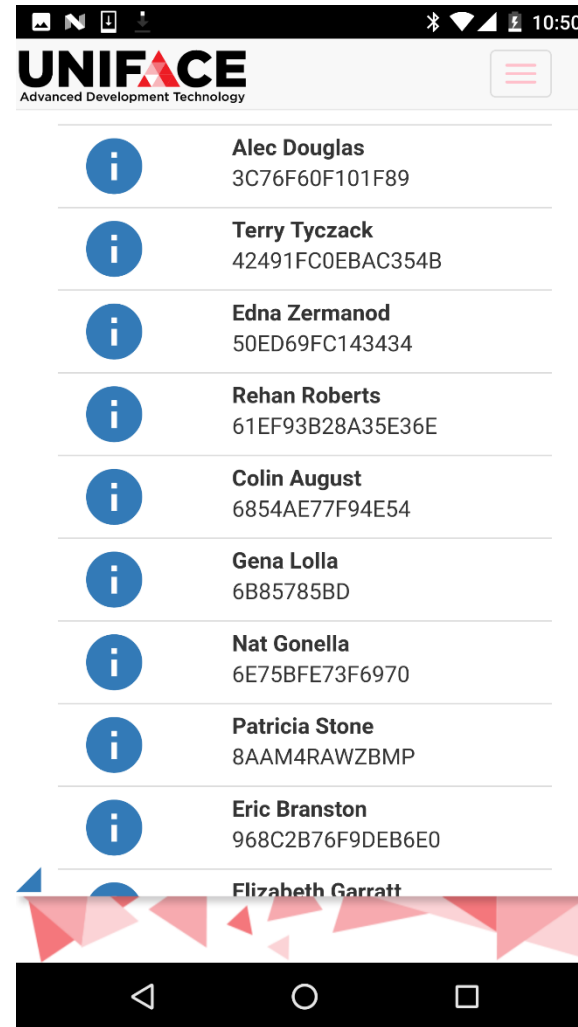
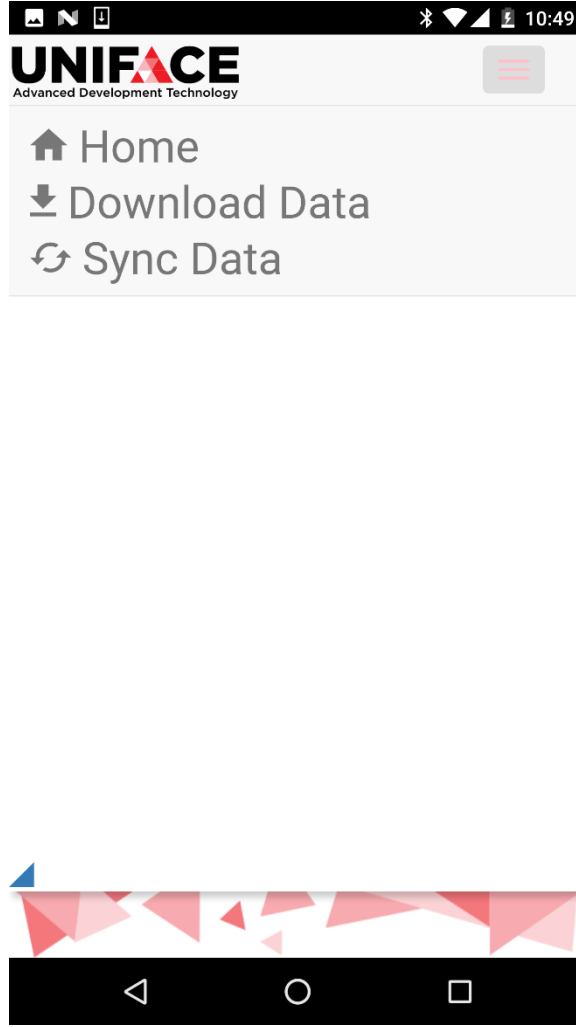
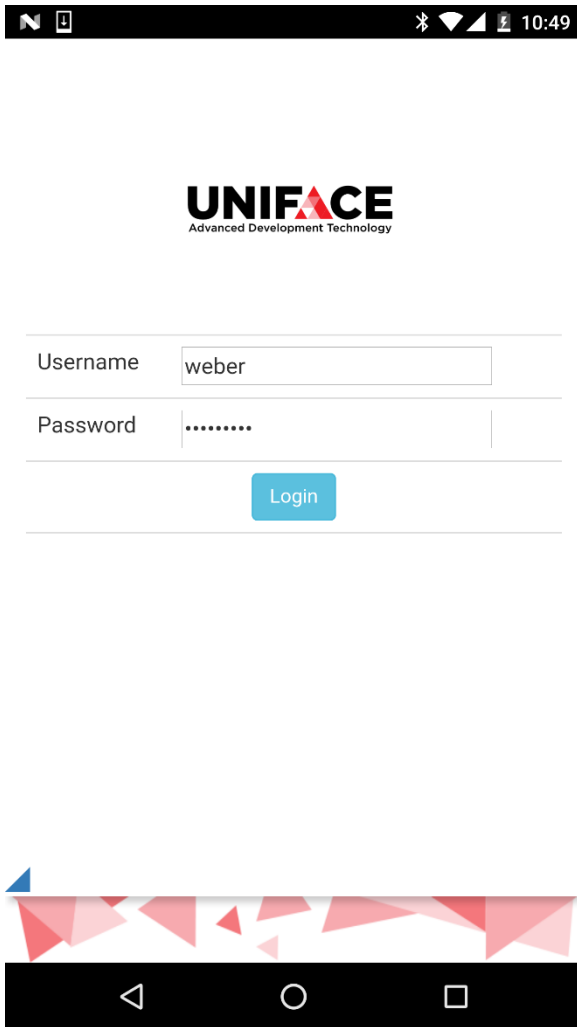
Mobile Startup Shell

Definitions	Settings	Author	Local	More
Logical Name				
Name of App			V10 MWS ACME	
App ID			com.uniface.sme.cw.MOBWSV10	
App Description			V10 Mobile Workshop ACME Ofine	
URL of first DSP			http://192.168.137.1:8166/MobileWorkshop/w	>>
App Version			0.1	
SDK Version			feature/Cordova6.2.0	
App Platforms			android	>>
Phonegap Plugins			CAMERA	>>
Custom Plugins				>>

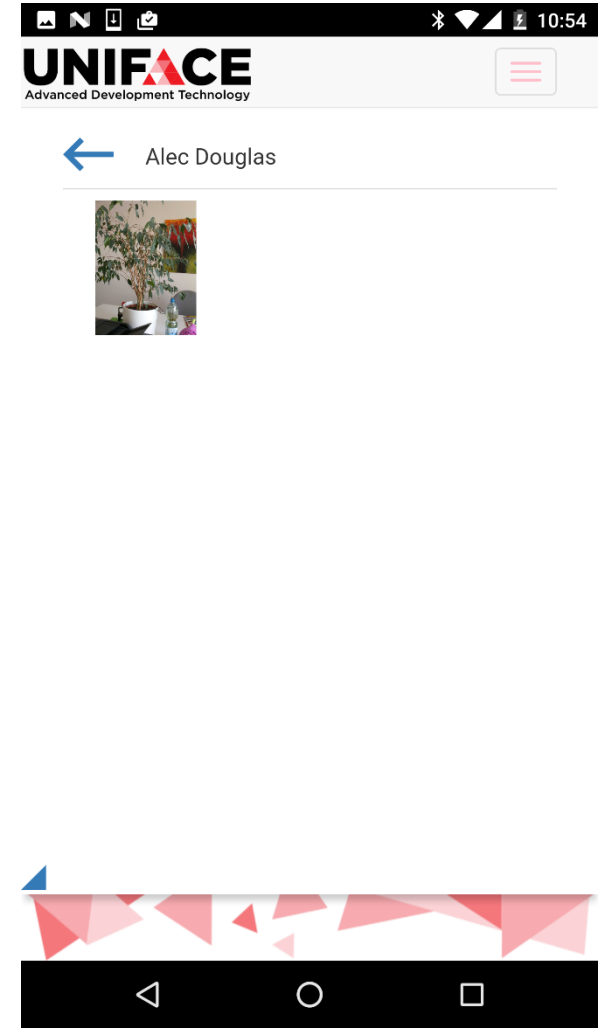
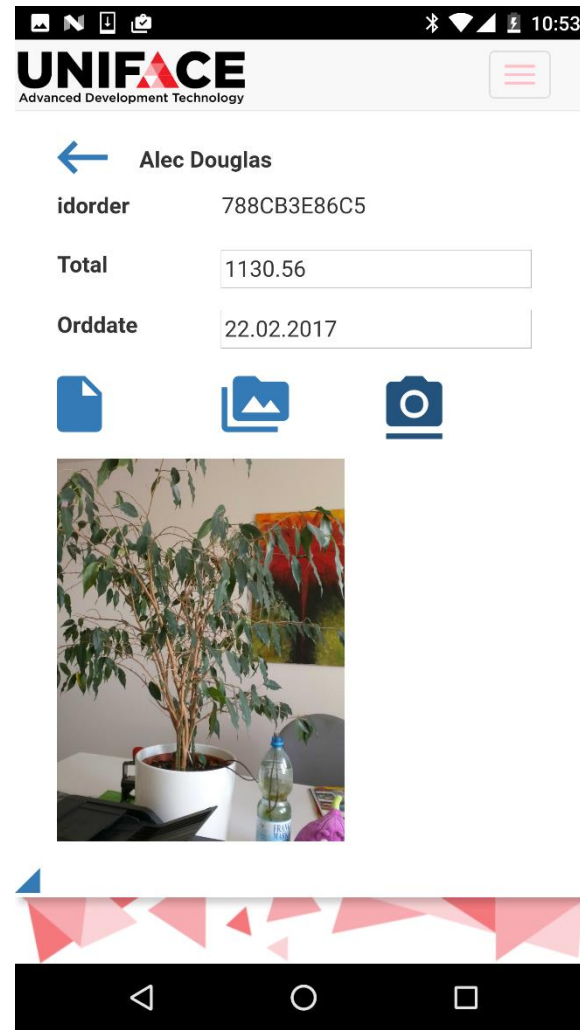
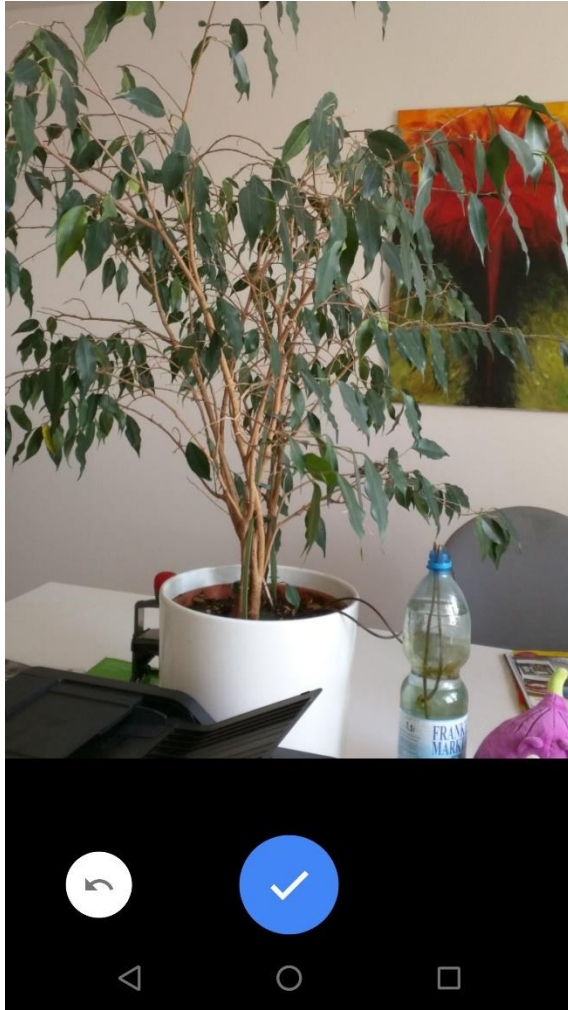
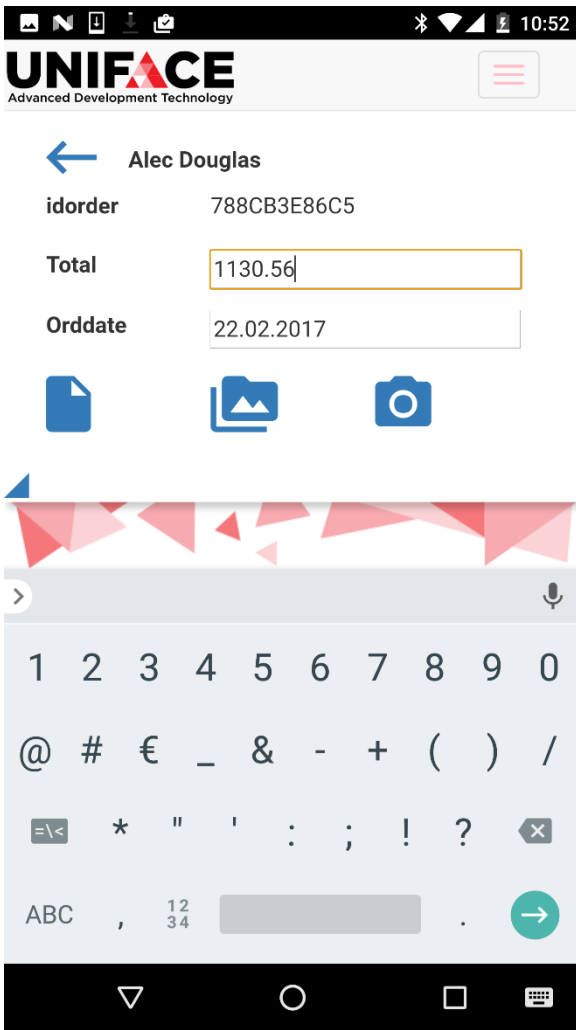




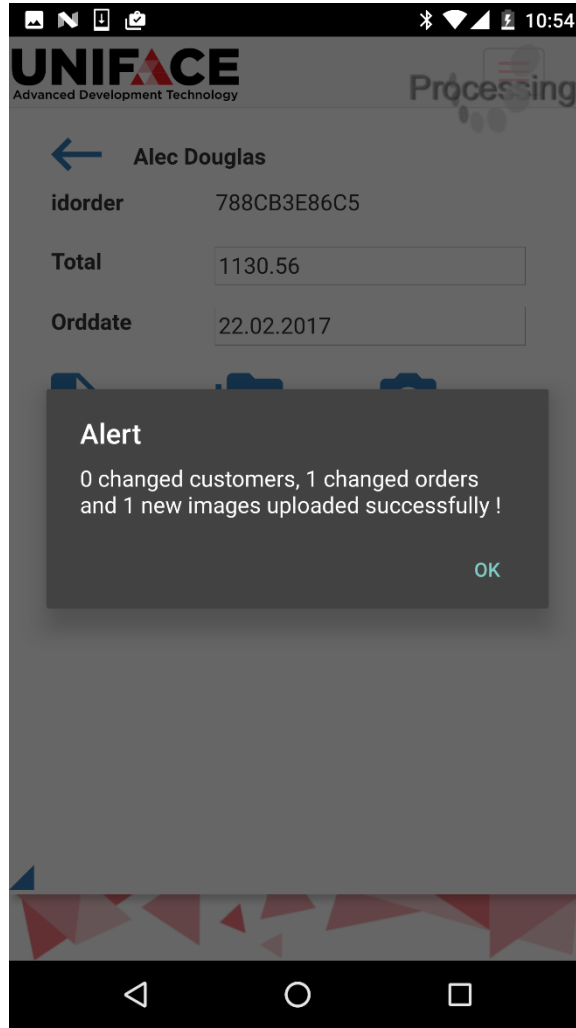
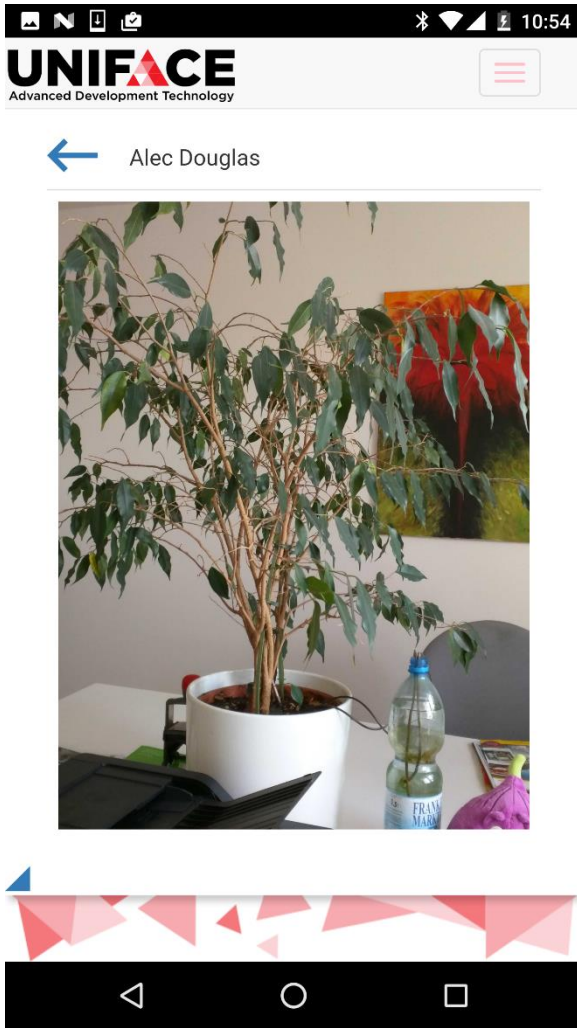
Demo



Demo



Demo



Conclusion of the POC

▲ COAMO decided for homogenous solution with Uniface Mobile



Thank You & Questions



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