


Project

EGEA Net based on vNext


0614-2

Version	Author	Date	State	Comment
0.1	Martin Rothschink	20.06.2014	Draft	

	Proposal 2	Nr. 0614-2	Page 2 of 10
	EGEA Net based on vNext	Edition: 0.1	Dated: 20.06.2014

Contents

1 Aim and overview	3
1.1 Notes on the breakdown	3
1.2 Terms and Acronyms	3
2 What is vNext (simplified)?	4
2.1 What is a service in vNext?	4
2.2 What is the ENC Server used for?	4
2.3 What is the communication model?	4
2.4 Data definitions used in vNext	4
2.5 Why not XML/SOAP web services?	4
3 EGEA Net Requirements and vNext	5
4 Email Topics for quote preparation	6
4.1 Technical specification	6
4.1.1 Technical specification of ENC interface concepts, data structures and services	6
4.1.2 Technical specification of ENC server interface	6
4.2 ENC Server Software	6
4.3 Conformance test plan and test suite	6
4.4 Update service	6
4.5 Implementation guideline	6
4.6 Schedule	6
4.7 Developer support	6
4.8 License terms	7
5 Requirements not fulfilled by vNext	8
6 Optional	9
6.1 Conformance test plan for ENC server	9
6.2 Conformance test suite for ENC server	9
6.3 Technical specification of ENC server	9
6.4 ENC client platform modules	9

	Proposal 2	Nr. 0614-2	Page 3 of 10
	EGEA Net based on vNext	Edition: 0.1	Dated: 20.06.2014

1 Aim and overview


This proposal documents an implementation of EGEA Net based on internet technology available today. This new development is called vNext (working title) in this document.

1.1 Notes on the breakdown

The topics in this document are based on the email „Drafts for quote preparation“ from Marco Le Brun on April 29th, 2014.

1.2 Terms and Acronyms

MANUFACTURER	Manufacturer of EGEA Net compatible equipment or software products
DEV	Developer creating EGEA Net client applications
USER	End user working with EGEA Net enabled products
SDK	Software development kit, a collection of tools and software packages

	Proposal 2	Nr. 0614-2	Page 4 of 10
	EGEA Net based on vNext	Edition: 0.1	Dated: 20.06.2014

2 What is vNext (simplified)?

vNext is the working title for a new solution using current, up-to-date internet technologies driven by mobile equipment.

Communication is based on simple HTTP and RESTful web services using JSON as data format.

“REST (Representational state transfer) is a way to create, read, update or delete information on a server using simple HTTP calls. It is an alternative to more complex mechanisms like SOAP, CORBA and RPC. A REST call is simply an HTTP request to the server.”

“JSON or JavaScript Object Notation, is an open standard format that uses human-readable text to transmit data objects consisting of attribute–value pairs. It is used primarily to transmit data between a server and web application, as an alternative to XML.”

(from Wikipedia)

The web service implementation (ENC server) will be done with node.js.

“Node.js is a software platform for scalable server-side and networking applications. Node.js applications are written in JavaScript. All of the popular server operating systems are supported, including Windows and Linux. Node.js applications are designed to maximize throughput and efficiency, using non-blocking I/O and asynchronous events.”

(from Wikipedia)

2.1 What is a service in vNext?

A service in vNext is a lightweight web service. Each web service supports one or more of 4 possible HTTP methods: GET (retrieve information), PUT (modify information), POST (create information) and DELETE (delete information).

A RESTful web service is defined with a base URI such as `http://encserver.local/orders`.

2.2 What is the ENC Server used for?

The ENC Server implements the web service endpoints and functionality and works like a standard web server. It stores created data in a local data base and handles queries for data.

2.3 What is the communication model?

A web service uses the request-response communication model. To support notifications, additional communication channels are required using web sockets.

2.4 Data definitions used in vNext

vNext will use two formats, XML and JSON.


XML will be used for test results based on asanetwork definitions because this is an established and well supported and understood format.

JSON will be used for order and vehicle data because it is lightweight and widely supported.

Data fields and data types will be similar to asanetwork definitions.

2.5 Why not XML/SOAP web services?


Web services based on SOAP/XML are a lot more complex and have a much higher data and processing overhead compared to REST/JSON. SOAP/XML is widely used with Java and Microsoft products but are not natively supported on mobile platforms like iOS.

	Proposal 2	Nr. 0614-2	Page 5 of 10
	EGEA Net based on vNext	Edition: 0.1	Dated: 20.06.2014

3 EGEA Net Requirements and vNext

EGEA Net Requirements are documented in "EGEA Net use cases and high-level requirements" version 8, (RequirementSpecificationENC V8.docx).

Topic	EGEA Net Requirement	vNext
4.1.1 Operating system for ENC Server	Windows, Linux	Fulfilled
4.1.2 Transmission protocols	TCP/IP	Fulfilled
4.1.3 Standard data formats	XML, JPG	Fulfilled, XML, JSON
4.1.4 Documentation	Language + Keywords in English	Fulfilled
4.2.1 Installation	Simple, user level	Fulfilled
4.2.1 Server discovery	Automatic	Fulfilled
4.2.1 Client acceptance	Automatic and manual	Fulfilled
4.2.2 Client compliance	Conformance test suite	Fulfilled
4.3.4 Client configuration	Optional group and sequence	Fulfilled
4.2.4 Status report	Connection and communication test	Fulfilled
4.2.5 New client types and services	Should not affect existing implementations	Fulfilled
4.2.6 Adding new information to existing service definitions	Should not affect existing implementations	Fulfilled
4.2.7 Software Updates	Provide version information and updates to clients	Possible with separate module
4.2.8 Device information	Client shall provide information to ENC Server	Fulfilled
4.2.9 Diagnosis	Diagnosis tool shall be available	Fulfilled
4.3.1 and 4.5.1 Order and status	Create, distribute and modify order data	Fulfilled
4.3.2 Time synchronization	ENC server shall provide time	Fulfilled
4.3.3 and 4.3.4 Vehicle data	Separate modules	Separate modules
4.3.6 and 4.5.2 test results	Shall transport any kind of data	Fulfilled
4.3.7 and 4.5.3 Retrieve results	Client can request former results	Fulfilled
4.4.1 Trigger action	Perform action on specific client	Fulfilled
4.4.2 Exchange live data	Live exchange directly and via ENC	Fulfilled
4.4.3 Remote control	Request client to perform a command	Fulfilled
4.6 Security	Shall be provided via public/private key infrastructure	Fulfilled, provided by clients

	Proposal 2	Nr. 0614-2	Page 7 of 10
	EGEA Net based on vNext	Edition: 0.1	Dated: 20.06.2014

4 Email Topics for quote preparation

4.1 Technical specification

This includes most requirements from chapter 4.

4.1.1 Technical specification of ENC interface concepts, data structures and services

This is the core technical specification of the ENC interface for MANUFACTURER and DEVs and includes:

vNext: New document

4.1.2 Technical specification of ENC server interface

This specification documents the ENC server:

- Documentation of internal functionality for DEVs
- Documentation for USERSs (installation and operation manual)

vNext: New document

4.2 ENC Server Software

Requirement 4.1.1: ENC Server software should be provided in source code and as compiled binaries for Windows and Linux operating systems.

vNext: New server software based on node.js. Node.js runs on Windows, Linux and Mac OS X.

4.3 Conformance test plan and test suite

Requirement 4.2.2: A conformance test plan and test suite shall be available.

vNext: New document and software. Test suite may be implemented with C#.

4.4 Update service

Requirement 4.2.7: ENC Update client

vNext: New server module

4.5 Implementation guideline

There is no explicit requirement for an implementation guideline in RequirementSpecificationENC V8.docx.


vNext: New document

4.6 Schedule

Technical specifications:	11-14 weeks
ENC Server implementation:	24-30 weeks
Conformance test plan and suite:	6-8 weeks
Update service:	3-4 weeks


4.7 Developer support

See quote.

	Proposal 2	Nr. 0614-2	Page 8 of 10
	EGEA Net based on vNext	Edition: 0.1	Dated: 20.06.2014


4.8 License terms

TBD

	Proposal 2	Nr. 0614-2	Page 9 of 10
	EGEA Net based on vNext	Edition: 0.1	Dated: 20.06.2014

5 Requirements not fulfilled by vNext

None

	Proposal 2	Nr. 0614-2	Page 10 of 10
	EGEA Net based on vNext	Edition: 0.1	Dated: 20.06.2014

6 Optional

6.1 Conformance test plan for ENC server

There is no explicit requirement for a conformance test plan for ENC server yet.

6.2 Conformance test suite for ENC server

There is no explicit requirement for a conformance test suite for ENC server yet.

6.3 Technical specification of ENC server

There is no explicit requirement for a technical specification, which allows independent development of an ENC server. EGEA Net should use, maintain and provide one implementation.

6.4 ENC client platform modules

ENC client platform modules shall help DEVs to integrate their products with less effort. These SDKs are platform and/or operating system specific.

TBD.