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ITEA 3 is a EUREKA strategic ICT cluster programme

Exploitable Results by Third Parties

ITEA3 14003 Medolution

Project details

Project leader:	Frank van der Linden
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Website:	http://medolution.org/

Name: Health Data Ingestion Stack		
Input(s):	Main feature(s)	Output(s):
▪ Measurements coming from health devices ▪ Health/Wellness data coming from Google Fit ▪ EHR records conforming to HL7 CCD	▪ Process data conforming to well-established international standards. ▪ True lambda architecture for both batch and stream processing for different kinds of use-cases. ▪ Easy harmonization of data. ▪ Configurable analytic processors on harmonized data.	▪ A holistic view on harmonized data. ▪ Analytical insights, summaries. ▪ Personal recommendations

Unique Selling Proposition(s):	▪ Connectors which allow automatic integration with standards based available EHR systems and medical devices. ▪ Health specific configuration of big data technologies such as Kafka, Spark, Cassandra etc. ▪ Health specific big data analysis machinery to calculate risk factors, summaries, recommendations etc.
Integration constraint(s):	▪ Device Connector runs on Android devices. ▪ IEEE 11073 compliant medical devices. ▪ HL7 CCD compliant Electronic Health Records ▪ Java 1.8
Intended user(s):	▪ Service and analytical solution providers in health sector can install the components of the Health Data Ingestion Stack in order to get rid of the details of big data technology stack and directly process stream or batch data. The stack includes ready-to-use analytic processes specific to the health and wellness problems.
Provider:	▪ SRDC Software Research Development and Consultancy Corporation
Contact point:	▪ A. Anil Sinaci – anil@srdc.com.tr
Condition(s) for reuse:	▪ Commercial License
	Latest update: 28 Feb 2019

Name: Atos CODEX AI Suite		
Input(s):	Main feature(s)	Output(s):
▪ Applications specification & requirements ▪ Deployment related constraints	▪ AI and Big Data Applications Design & Development ▪ Application Lifecycle Management from design to deployment & run ▪ Application toolset to accelerate development time	▪ Operational deployed applications
Unique Selling Proposition(s):	▪ Automated application deployment including infrastructure provisioning, software provisioning ▪ Deploy anywhere: any cloud (Openstack, AWS, GCP…), on premise, HPC…) ▪ Scalability management ▪ Real time big data processing, devices and data sources connectivity ▪ Catalogue of ready to use Big Data and AI components, as well of predefined application templates ▪ Studio for application design and deployment management	
Integration constraint(s):	▪ Linux, Ansible, Docker	
Intended user(s):	▪ Big Data and AI application designers ▪ Data Scientists ▪ IT administrators (Application deployment management / Infrastructure)	
Provider:	▪ Bull / Atos BDS	
Contact point:	▪ https://atos.net/en/products/codex-ai-suite, cedric.bourrasset@atos.net	
Condition(s) for reuse:	▪ AI application (Machine Learning) development part is proprietary and available through subscription ▪ Orchestrator, Application design and deployment studio, catalogue of Big Data Components are open source (Apache 2), available on Github. https://ystia.github.io/	
	Latest update: 14 March 2019	

Name: EHR Data Connector		
Input(s):	Main feature(s)	Output(s):
▪ HL7 CCD compliant Electronic Health Records	▪ Conversion from HL7 CCD EHR documents to HL7 FHIR resources	▪ HL7 FHIR (STU2) Resources

Unique Selling Proposition(s):	▪ Automatic data conversion from HL7 CCD compliant EHRs to HL7 FHIR resources
Integration constraint(s):	▪ HL7 CCD ▪ HL7 FHIR (STU2)
Intended user(s):	▪ Health institutes which maintain electronic health records and intends to provide HL7 FHIR API on top of their health records can use this converter to populate their FHIR Repositories or serve FHIR endpoints.
Provider:	▪ SRDC Software Research Development and Consultancy Corporation
Contact point:	▪ A. Anil Sinaci – anil@srdc.com.tr
Condition(s) for reuse:	▪ Open Source (Apache v2.0) ▪ https://github.com/srdc/cda2fhir
	Latest update: 28 Feb 2019

Name: Pastell-based Interoperability Module		
Input(s):	Main feature(s)	Output(s):
▪ Raw data ▪ Output format	▪ Facilitating interoperability in heterogeneous environments at Data Exchange level ▪ Lightweight data conversion to standard formats	▪ Workflow document ▪ Formatted data ▪ Monitoring logs

Unique Selling Proposition(s):	▪ Based on open-source solution ▪ Standards integration ▪ Workflow digitization ▪ Secure transactions and electronic document transmission ▪ High throughput server ▪ Timestamped process logs ▪ Monitoring and notifications ▪ Unified RESTful API
Integration constraint(s):	▪ Access to local or remote input data server
Intended user(s):	▪ Any applications that necessitate workflows for secure data routing ▪ Healthcare applications requiring data in Open mHealth format ▪ Public administrations
Provider:	▪ Prologue, Libriciel
Contact point:	▪ contact@prologue-numerique.fr
Condition(s) for reuse:	▪ For Pastell: Open-source, CeCiLL V2 ▪ For Interoperability module: Commercial license to be negotiated

Latest update: 06 03 2019

Name: IoT management platform		
Input(s):	Main feature(s)	Output(s):
▪ Sensors	▪ Management of IoT devices virtualization and lifecycle ▪ Routing device data to Medolution cloud storage	▪ Sensor data ▪ Monitoring logs
Unique Selling Proposition(s):	▪ Support of IoT-enabled and legacy devices ▪ Unified interface for heterogeneous devices ▪ Handling of device provisioning, configuration, operation, monitoring, and update ▪ Adapting functionality access to user roles ▪ Support of public/private cloud for system deployment and data routing ▪ Decoupling from infrastructure- and hardware-dependent aspects ▪ Frontend Web interface and REST API	
Integration constraint(s):	▪ None	
Intended user(s):	▪ IoT device administrators ▪ IoT device users	
Provider:	▪ Prologue	
Contact point:	▪ Celine BADR KANAAN - cbadr@prologue.fr	
Condition(s) for reuse:	▪ Commercial license to be negotiated	
	Latest update: 06 03 2019	

Name: Stroke Application: Prediction of Delayed Cerebral Infarction (DCI)		
Input(s):	Main feature(s)	Output(s):
▪ Artificial Intelligence and Machine Learning Algorithms for heterogeneous data analysis.	▪ DCI prediction; ▪ Visualization of main features; ▪ Autoencoder of image data; ▪ Combination of image and clinical data analysis	▪ Assessment of chance of the occurrence of DCI ▪ Plot of main features attributing to this prognosis

Unique Selling Proposition(s):	▪ Full automated analysis; ▪ Reduction of image data to 4 main image features; ▪ Analysis of combined image and clinical data; ▪ Doubling of the predictive value compared to traditional prognostic models;
Integration constraint(s):	▪ Stand alone; ▪ Small memory footprint;
Intended user(s):	▪ Medical data analytics providers; ▪ Clinicians; ▪ Epidemiologists;
Provider:	▪ Amsterdam UMC, location AMC
Contact point:	▪ Frank van der Linden
Condition(s) for reuse:	▪ Licensing;
	Latest update: 4 3 2019

Name: Hyper-acute stroke solutions		
Input(s):	Main feature(s)	Output(s):
▪ Data that enables identification of likely stroke patients and grade stroke-deficit severity. ▪ Video to support virtual triage.	▪ Large vessel occlusion (LVO) prediction ▪ Support for LAMS and FAST-ED stroke scales ▪ Support virtual presence of a neurologist during triage ▪ Hospital selection based on stroke scales and relevant vital signs	▪ Assessment of chance of a large vessel occlusion ▪ Decision whether to go to the nearest or to a comprehensive stroke center ▪ Notifications to all disciplines involved

Unique Selling Proposition(s):	▪ Virtual presence of the neurologist during triage ▪ Anticipated to result in an additional 26% (21%-31%) of LVO patients being brought directly to a comprehensive stroke center ▪ Expected reduction in treatment time of approximately an hour ▪ Expected improved outcome for the LVO patients ▪ Expected cost saving the first year in the Netherlands: €700.000
Integration constraint(s):	▪ Needs wifi or mobile network connection (4G or 5G)
Intended user(s):	▪ Emergency call center ▪ Stroke neurologist ▪ Ambulance stroke nurse
Provider:	▪ Philips
Contact point:	▪ Hubrecht de Bliek
Condition(s) for reuse:	▪ Licensing;

Latest update: 4 3 2019

Name: Data Anonymization System		
Input(s):	Main feature(s)	Output(s):
▪ Structured data	▪ Supports the k-anonymity data privacy model ▪ Extendable library of irreversible anonymization algorithms and pre-processing data aggregation functions, including time-series data pre-processing (e.g. for sensor based data) ▪ Secure irreversible data linking capability across multiple datasets ▪ Role-based access and workflow for data anonymization lifecycle ▪ Set of user-facing components & graphical web UIs ▪ Comprehensive audit logging	▪ Unanonymized output data sets under the custody rules of the data provider
Unique Selling Proposition(s):	▪ Irreversible data anonymization with optimal consideration of data utility for acceptable re-identification risk and data use scenarios ▪ In-app data view allows users to view and compare possible anonymization tiers under relevant constrains and results of selected data anonymization function as they proceed through the process, as opposed to standard anonymization. ▪ Supports an iterative approach to requests and approvals for anonymized data ▪ Significantly reduces the risk of re-identification attacks and supports information governance and audit compliance	
Integration constraint(s):	▪ Multi-cloud support: AWS, Azure ▪ Platforms supported: UNIX ▪ Database agnostic: MongoDB, Cassandra, easy scalability through configurable GraphQL API based Data Connectors ▪ OS: ubuntu 16.04 LTS (64-bit) ▪ RAM: 32GB ▪ Processor: Intel Core i7-6500U CPU @ 2.50GHz × 4 ▪ Storage: 256GB ▪ NodeJS and npm installed	
Intended user(s):	Data Managers and Data Custodians, Data and Data-driven application Providers	
Provider:	Norima Consulting Inc.	
Contact point:	James Eichele, james.eichele@norimaconsulting.com	
Condition(s) for reuse:	Commercial License	
	Latest update: 20 03 2019	

Name: Real Time Decision Support Solution for Remote Monitoring of Objects		
Input(s):	Main feature(s)	Output(s):
▪ Data from sensors ▪ Data from forms ▪ Rules from Protocol	▪ Rules Editor ▪ API to sensors and other outside sources ▪ Visualization of data streams; ▪ Real Time Notification calculation ▪ Runs as Google Cloud Service, absolute scalability ▪ Mobile App for Notifications	▪ Notifications plus background data ▪ Dashboards with trends

Unique Selling Proposition(s):	▪ Configurability of Remote Monitoring solution per individual object ▪ Ease of use for experts ▪ Prediction capabilities
Integration constraint(s):	▪ Sensor APIs should use standard protocols
Intended user(s):	▪ Clinicians; ▪ Other Care givers who monitor patients remotely
Provider:	▪ Sopheon RAD
Contact point:	▪ Huub Rutten, Huub.Rutten@sopheon.com
Condition(s) for reuse:	▪ Multiple business models possible.
	Latest update: 04 04 2019