



bio·logis

Genetic Information Management

Genetic Information Management Suite

Efficient translation of genetic data
into clinical practice

bio.logis Genetic Information Management GmbH

Who we are



bio·logis

Genetic Information Management

bio.logis Genetic Information Management GmbH

Founded 2013
Spin-off from the bio.logis Center for Human Genetics

Location Frankfurt Innovation Center for Biotechnology
Frankfurt, Germany

Employees 25 employees
Highly qualified teams in IT-/Bioinformatics
and Human Genetics

Core Business Software and services for diagnostic laboratories

Participation in EU-Projects within Horizon 2020 program

- Genetics Clinic of the Future
- Ubiquitous Pharmacogenomics



What we do



bio·logis

Genetic Information Management

Our goal:

Support and drive the adoption of human genetic diagnostics into clinical practice

Our offer:

Innovative IT-tools and services, supporting genetic laboratories in translating genetic test results into clinical insights and recommendations

Our dedicated Genetic Information Management Suite (GIMS) focuses on process steps which are currently facing an unmet need, such as

- Efficient content management*
- High throughput production of diagnostic reports*
- Delivery of results and information to the point of care*

Process chain genetic diagnostics



Extracting DNA, signal measurement, etc.

Image analysis, base calling, alignment, etc.

Variant filtering, annotation, assessment

Translation of results into clinical information, production of diagnostic reports

Providing results and clinical recommendations for usage at *Point of Care* (PoC)

Process chain genetic diagnostics



Problem:

Translation of genetic testing results into clinically actionable information and recommendations for personalized treatment

Why?

- Non-standardized process
- Manual work, time consuming
- Requires rare specially trained experts



Expensive, non scalable

Process chain genetic diagnostics



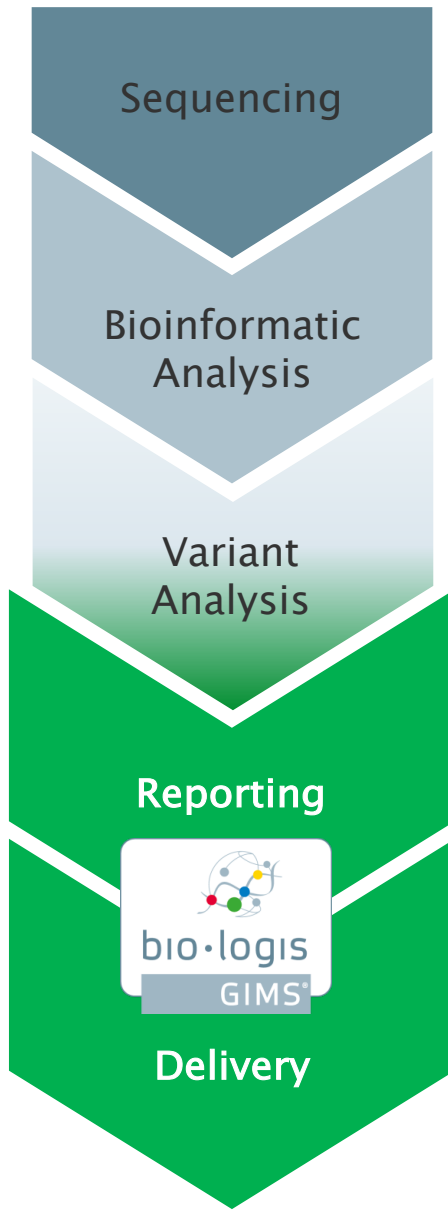
Problem:

Delivery of results & perception at Point of Care

Why?

- Traditional DX-Reports no longer adequate to transport all necessary and relevant information resulting from multi-gene analyses
- DX-Reports only use fractions of data resulting from a genetic test
- Remaining data not available for subsequent clinical questions

GIMS®: Genetic Information Management Suite



bio.logis GIMS®

The solution for Genetic Labs

- Efficient management of diagnostic content
- Automated production of diagnostic reports
- Structured documentation and sharing of assessments, decisions and reference information
- Delivery and presentation of genetic test results through web-based applications at *Point of Care*
- Developed by highly experienced team of geneticists and bioinformatics experts

GIMS® – Modules



Diagnostic Report Module

- Efficient management of diagnostic content (interpretations, descriptions, graphs, etc.)
- Automated production of diagnostic reports

 Certified as
Medical Device Class I



Knowledge Management Module

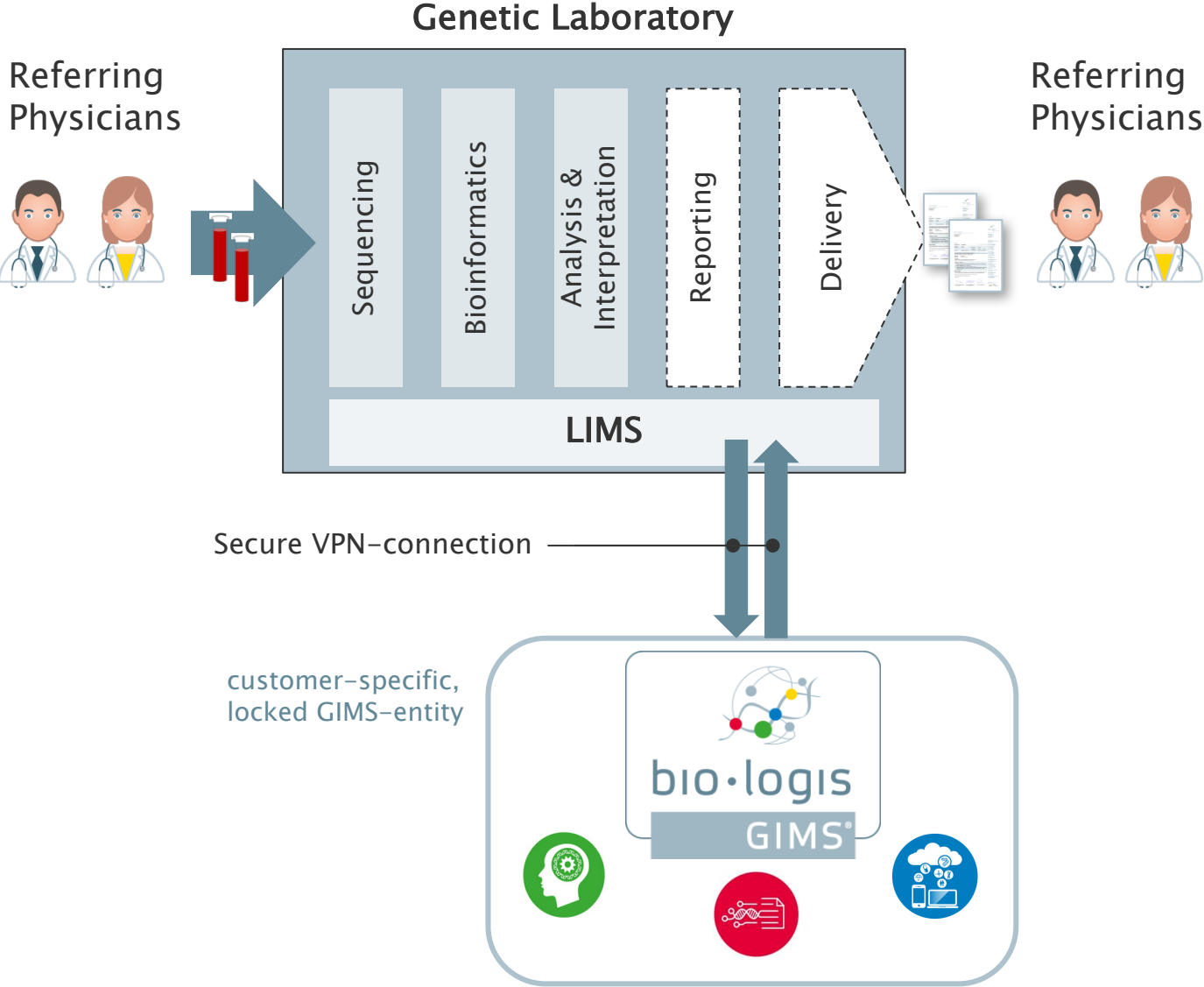
- Structured documentation and sharing of variant assessments, decisions and reference information
- Decision support for diagnostic reporting



Delivery Module

- Delivery and presentation of genetic test results through web-based applications at Point of Care

GIMS Integration





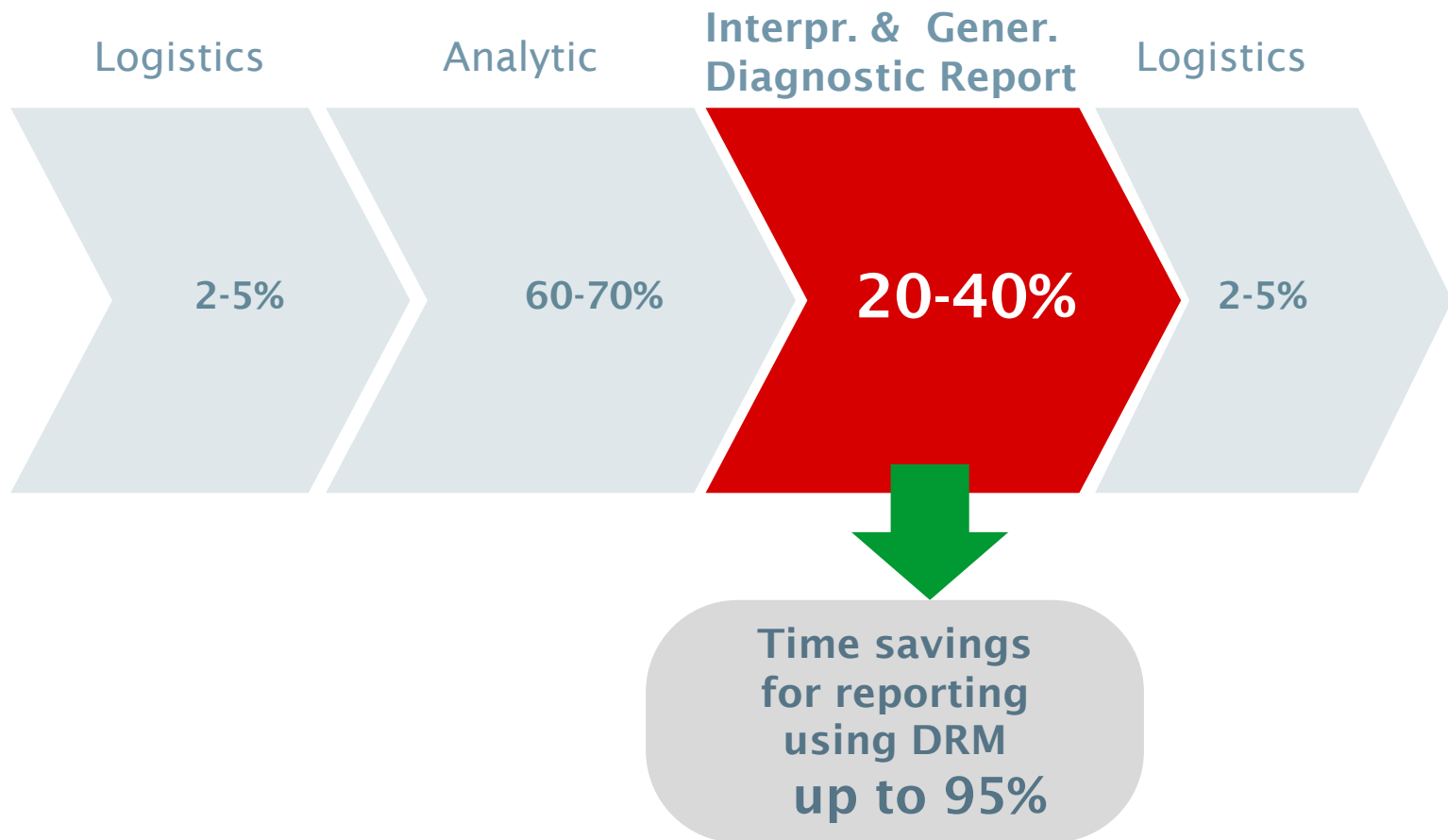
Diagnostic Report Module



Diagnostic Report Module

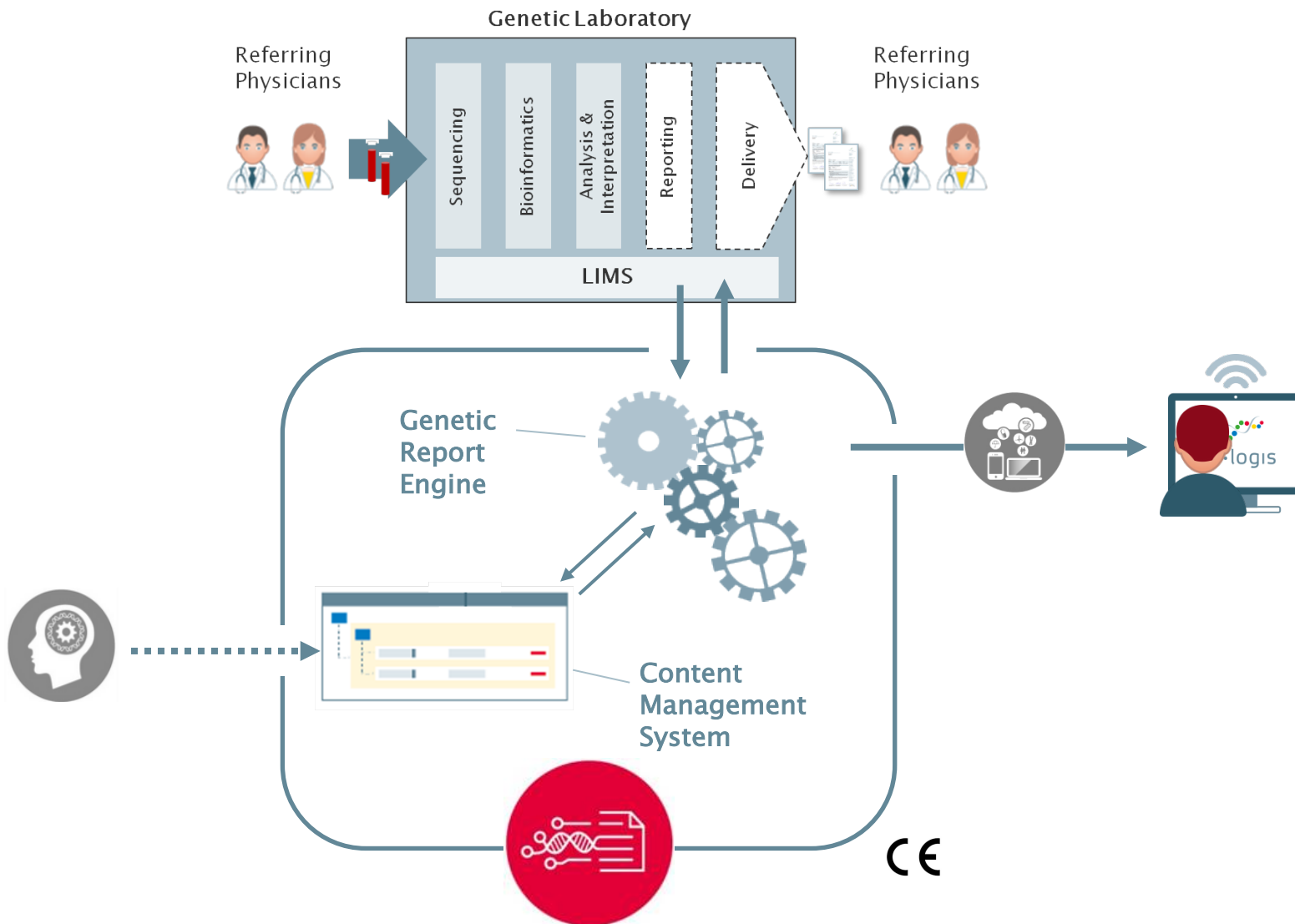
Value drivers costs + turnaround time

Cost structure lab process *human genetic test*





Diagnostic Report Module



Diagnostic Report Module



Diagnostic Report Module

How it works

1. Import of lab results:

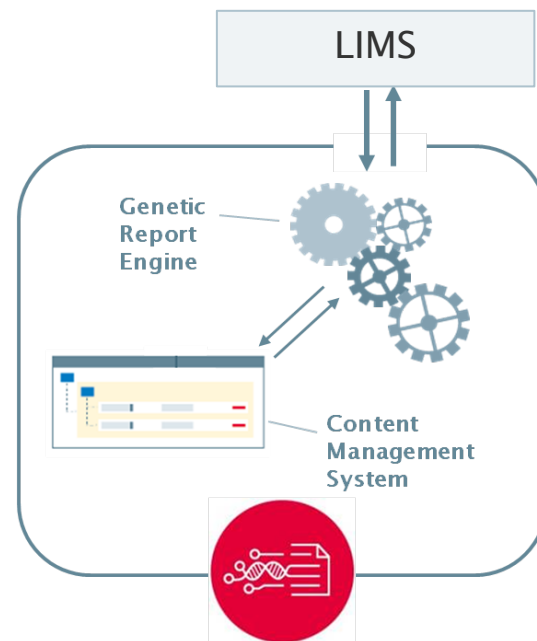
- Clinical data (variants, gender, medication, symptoms, etc.) imported into customer-specific GIMS-instance through standard interfaces

2. Report compilation:

- Report Engine allocates content (text elements, graphs, etc.) from content management system based on incoming clinical data
- Automated compilation of appropriate content into clinical report

3. Provision of diagnostic report for medical validation

- Re-import into clients LIMS as structured data or ready to use text/pdf-document using proprietary Report Layout Engine





Diagnostic Report Module

Where's the value?

- **Automated production of diagnostic reports**
 - Significant time savings through automation of manual work steps
- **Fully functional Content Management System**
 - Compilation and management of diagnostic content in one central entity with clear-cut workflows
 - Every user has access to the same, up-to-date contents – standardized format, wording, quality for diagnostic reports
 - Preservation of Know-How in case of personnel turnover
- **Compliance with international data security regulations**
 - Hosting in high security health care data center of Deutsche Telekom
 - CE-Certification as Medical Device Class I



Diagnostic Report Module

Content Management System – Key Features

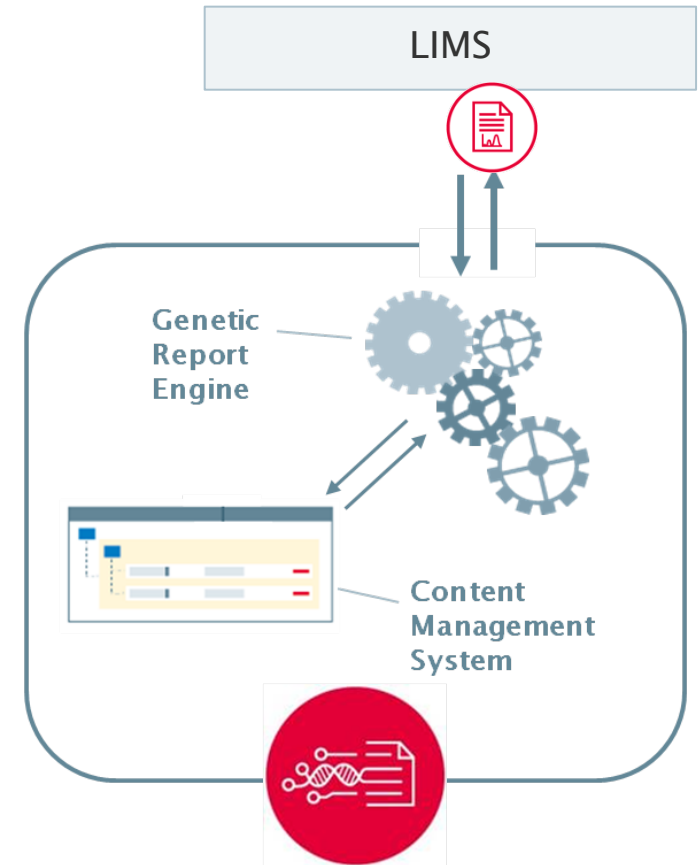
- Individual workflows for different diagnostic reports
- Free grouping of parameters in decision trees
- Parameters (e.g. genotypes) can be defined or imported
- Version control of content modifications
- Similar text elements displayed in real-time during editing: reduction of redundancies
- Full text search
- Comment function and discussions within system
- Individual literature references for every text element
- User rights, roles, functions fully editable
- Full UTF-8 Support



Report Layout Engine

For converting diagnostic report content into ready to use documents

- Converts structured report data delivered by Diagnostic Report Module into ready to use documents (PDF, ODT)
- Layout and editing based on customer-defined templates
- Define and use your own branding, themes, styles and structure for diagnostic reports
- Templates easily manageable within the system – no programming required
- Usable in combination with Diagnostic Report Module or as stand-alone reporting tool

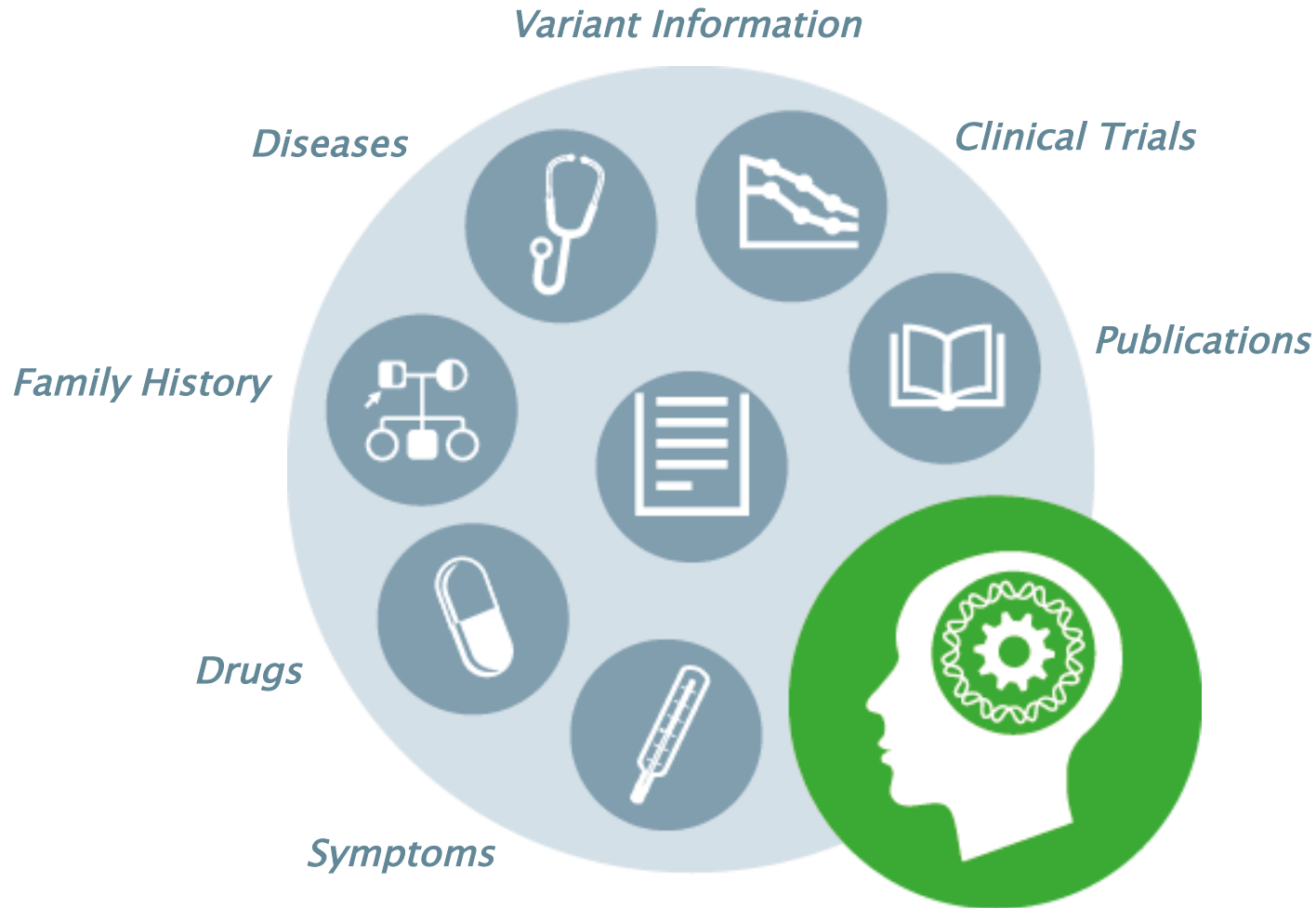




Knowledge Management Module

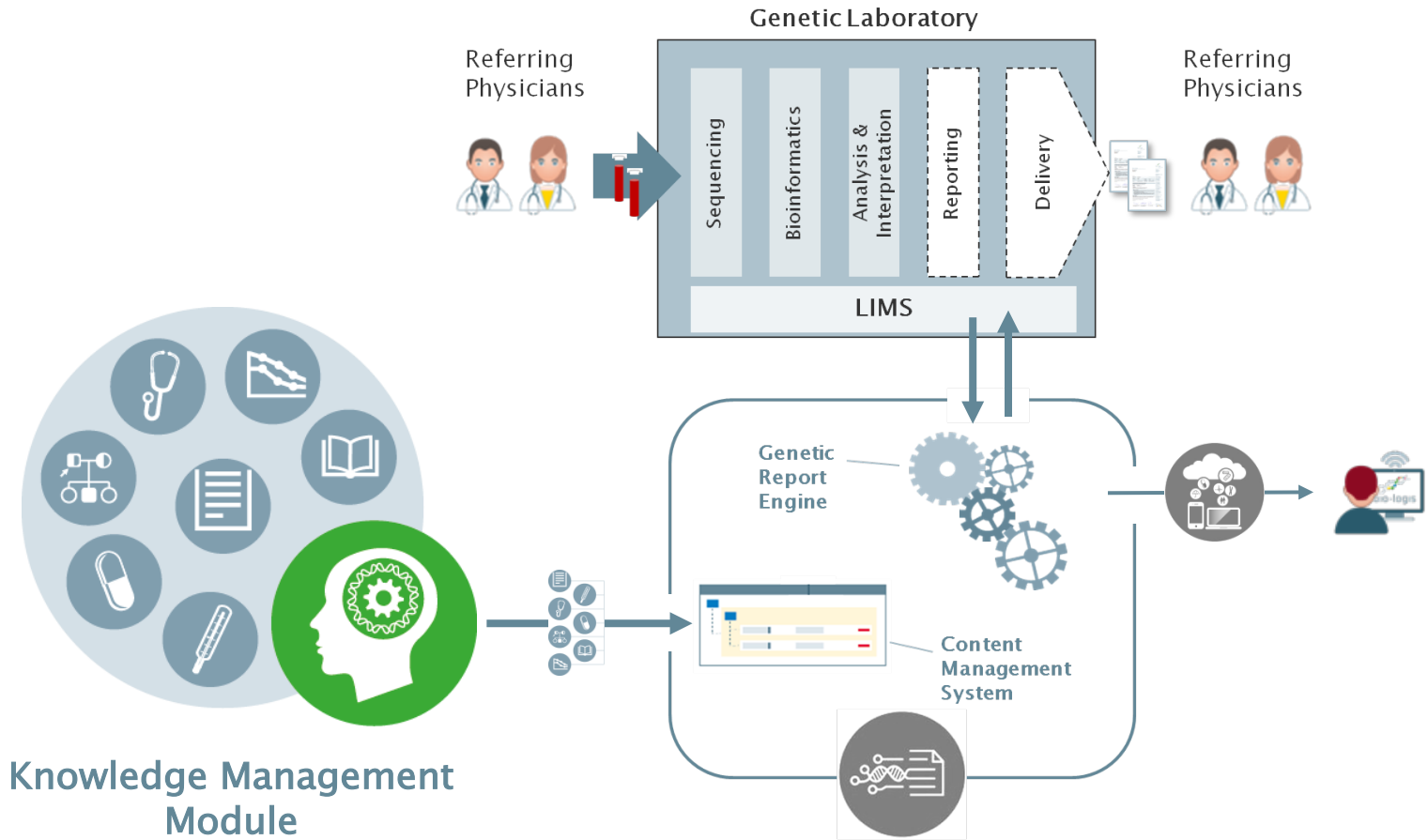


Knowledge Management Module





Knowledge Management Module





Knowledge Management Module

How it works

- Step-wise **guidance** through variant assessment process
- **Structured documentation** of variant information, assessments, decisions, reference information, etc.
- **Automated notifications** when content is outdated and needs to be re-assessed
- **Direct interface to Diagnostic Report Module**
- **Sharing function** for information and content





Knowledge Management Module

Where's the value?

- **Structured documentation process** with clear-cut workflows for review and approval
- **Makes decision process transparent and reproducible** – ideal for QA and audit purposes
- **Provides curated information** for diagnostic decision support
- **Supports automated report production** through direct interface to **Diagnostic Report Module**
- **Sharing of medical content and knowledge** within a growing network of genetic laboratories, institutions and expert groups

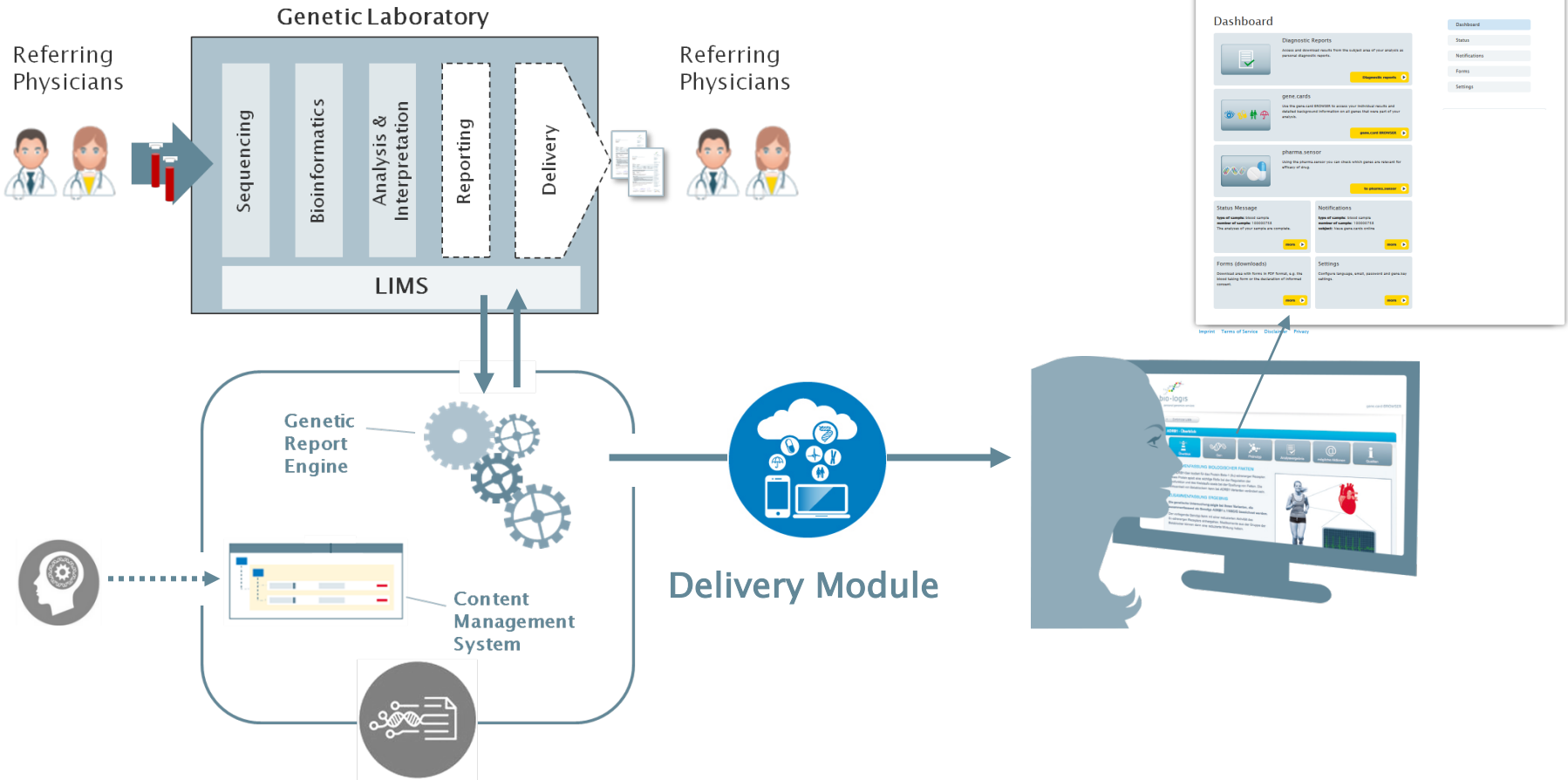




Delivery Module



Delivery Module

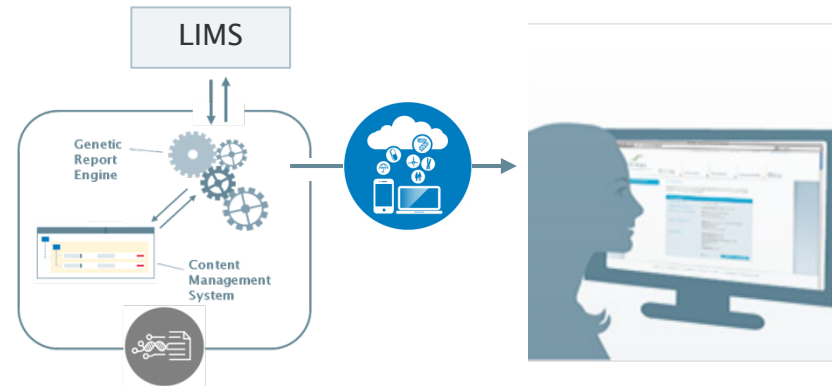




Delivery Module

How it works

- Compilation of test results in patient-specific **Genetic Health Record (GHR)**
- Labs can provide referring physicians and patients access to a patient's GHR via branded web portal or mobile app
- Secure user interface for patients and physicians
- Data hosted within customer specific GIMS-entity, accessible via VPN

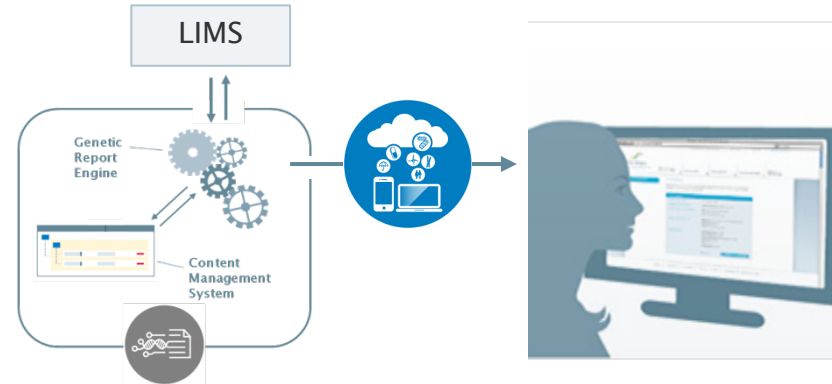




Delivery Module

Where's the value?

- Supports customer retention by providing results in an easily accessible way
- Real-time generation of Diagnostic Reports within Genetic Health Record
 - Reports always up-to-date
- Alert function when new reports, information, etc. are available
- Include important medical information, knowledge, references, etc.
 - Portal contents customizable to customers requirements
- Direct integration into EHRs possible





Delivery Module Access to GHR through Portal

Intuitive dashboard
for optimized usability

The dashboard provides a central hub for users to access their diagnostic reports, view gene cards, and utilize the pharma.sensor tool. It also includes sections for status messages, notifications, and downloadable forms.

Complementary genetic
information, knowledge,
references, etc.

This view provides detailed biological and clinical information for the CYP2C9 gene. It includes a 3D visualization of the protein structure and a summary of genetic analysis results, such as identifying individuals with reduced enzyme activity compared to the general population.

The pharma.sensor tool allows users to search for drugs and view associated genes. It provides information on how the pharma.sensor works and lists the eight most important active ingredients/agents, such as citalopram and clopidogrel.

Numerous filtering options
(genes, disease areas,
medication, etc.)

This view displays a list of gene cards with detailed descriptions and clinical relevance. The 'Legend' section on the right allows users to filter the results by various categories such as 'Pharmacogenetics (22)', 'Treatment of Cancer (5)', and 'Blood Coagulation System (3)'.

Ready to use content panels for GIMS

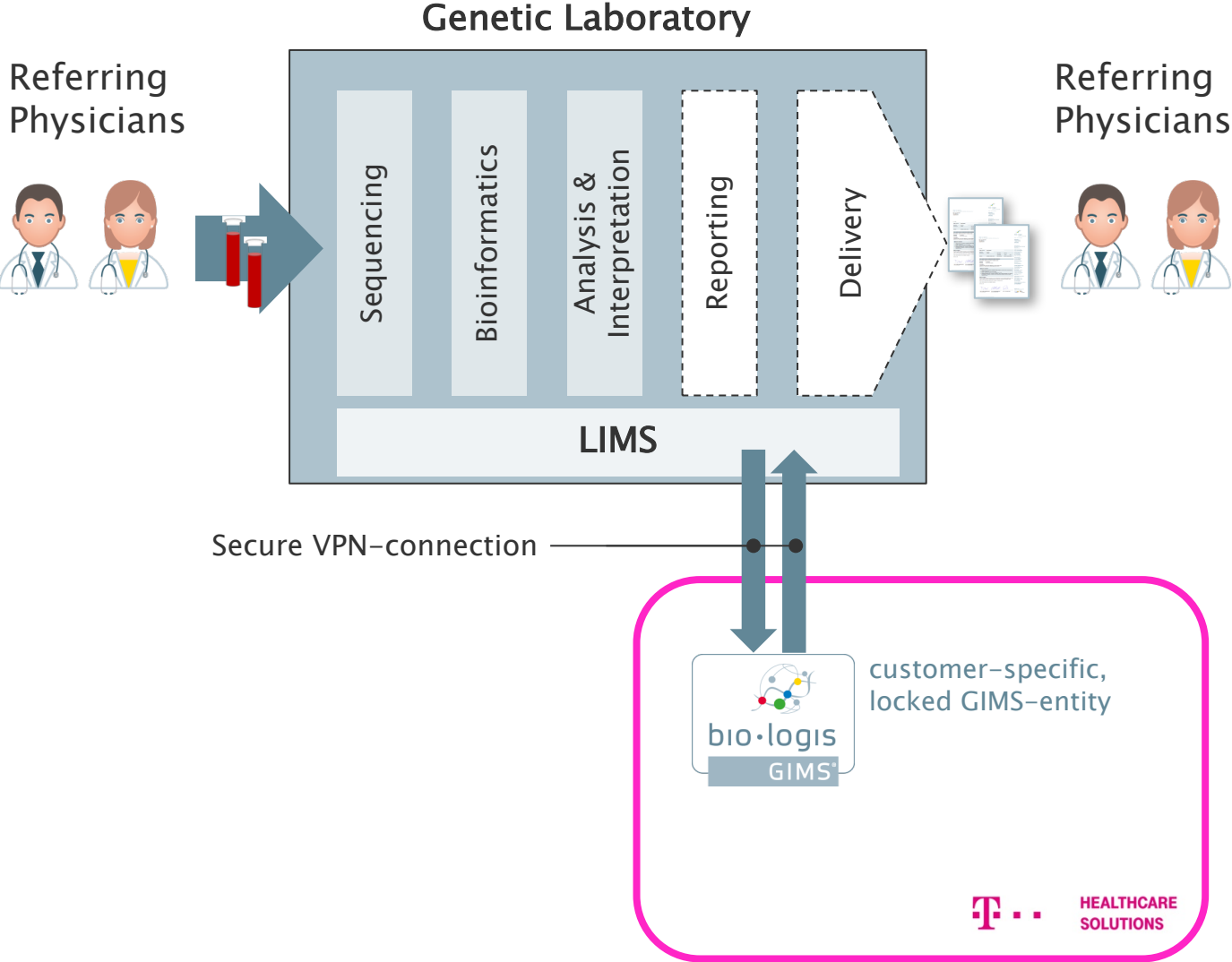
Fully automated report generation for selected diagnostic areas with well established panels

Medications & Therapy

Family Planning & Pregnancy

Prevention & Nutrition

GIMS® Infrastructure



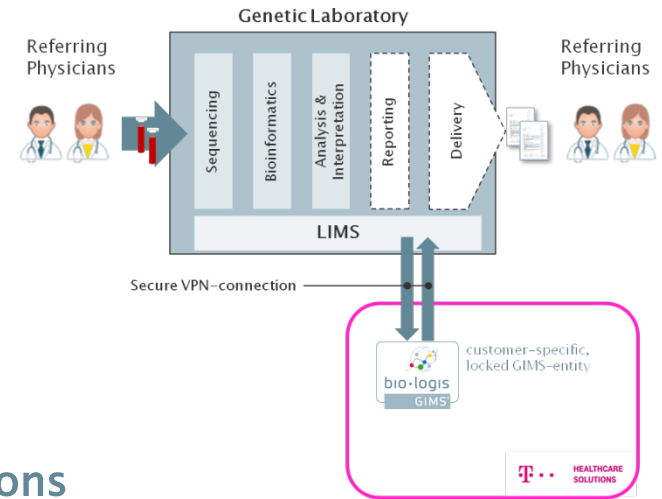
GIMS® Infrastructure

GIMS hosted in high security Healthcare Data Center of Deutsche Telekom

- No public cloud!
- Customer-specific, locked GIMS-entity
- Secure user access via VPN-connection
- No third-party access to customer data
- **Compliant with EU data protection regulations**

Easily integrated in every laboratory IT infrastructure

- Connection to customer's LIMS or bioinformatic platform
- GIMS supports all standard interfaces (HL7, json, etc.)



Benefits at a glance



- **Automated production of diagnostic reports**
 - Significant time savings through automation of manual work steps
- **Fully functional Content Management System**
 - Compilation and management of diagnostic content in one central entity with clear-cut workflows
- **Structured documentation process with clear-cut workflows**
 - Makes decision process transparent and reproducible
- **Enhanced delivery of results and clinical information at *Point of Care***
 - Secured user access for patient and physician through customer-branded web-portal



- EU-funded project within the Horizon 2020 program
- Aiming to support the implementation of pharmacogenomics in clinical practice
- bio.logis GIM responsible for implementing GIMS at 7 selected hospitals across Europe



Servicio Andaluz de Salud
CONSEJERÍA DE SALUD

Univerza v Ljubljani



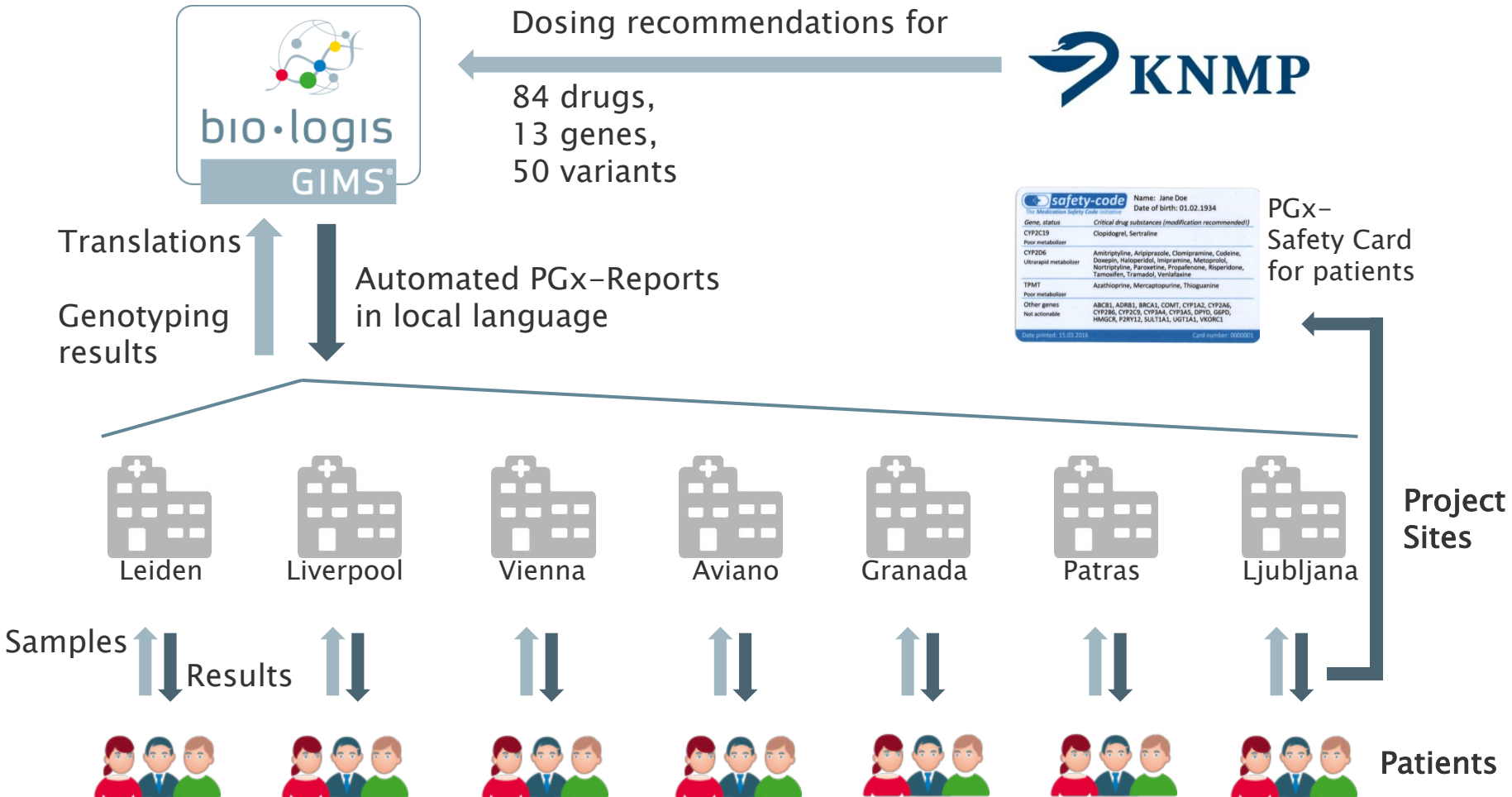


Project Outline

- KNMP, Netherlands provides a list of medications which are known to be influenced by genetic variations along with the appropriate genes/variants and recommendations
- Patients who are intended to receive one of the predefined medications are recruited in 7 project sites across Europe and genotyped with a standard PGx-panel
 - Leiden University Medical Center
 - University of Liverpool
 - Medical University of Vienna
 - National Cancer Centre Aviano
 - San Cecilio University Hospital Granada
 - University of Patras
 - University of Ljubljana
- GIMS will be implemented at the 7 project sites and will be used for
 - translating the KNMP recommendations into the local languages
 - automatically generating PGx-reports based on found variants
 - Delivering results to patients



U-PGx | Ubiquitous Pharmacogenomics



translating DNA into health

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