Technical Briefing Companion for the Execute Summary submitted 9/8/16 by:

resilient network systems	WebShield Inc.	SAFE-BioPharma.	carebox	InterSystems Health | Business | Government
Distributed AuthN & AuthZ; cloud-based policy engine	Privacy Preserving Identity Matching; Unified Trust Model	Trusted provider of digital identities	Patient-centric interop of health documents / data	Health data access, HIE & Interoperability platform

Notes:

The same infrastructure can be used for many use cases including medication adherence, clinical trials recruitment, population reporting and fraud reduction, but to simplify, this will only cover healthcare data movement and storage for personalized care management.

Health records are **fragmented and scattered** across **enterprise IT siloes**

Pharmacies Radiology and Imaging Centers Clinical Labs Providers Payers Personal Health Devices Demographic Data Customer Profiles

...each of which relies upon identity information that is inconsistent, incomplete, and changing – and often erroneous.

Absent a way to agree upon and verify identity, it is impossible to reliably:

- recognize the consumer online across devices and apps.

- search for and find a consumer's records across organizations and devices.

- prove authorization to access or use a consumer's records.

Without a mutually trusted way for disparate organizations and systems to agree whether they are talking about the **same person** (either for online users or patient records), there is no way for a person to **enforce their legal right to access and share their own health records**.

This is the **biggest barrier** to data sharing and consumer empowerment **in healthcare.**

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Identity Catch-22 All the data necessary to **strongly verify the identity and accurately match** records of everyone in the country exists, and is held by organizations desperate to do so.

However, identity data itself is highly privacy sensitive, proprietary, and regulated. **Only the consumer can authorize the use of data about themselves from all sources**.

Without access to these diverse sources, the **consumer can't prove their identity** to the organizations that hold data about them, and therefore can't authorize the use of their data by matching algorithms that can verify their identity and match their records. **Catch-22**.
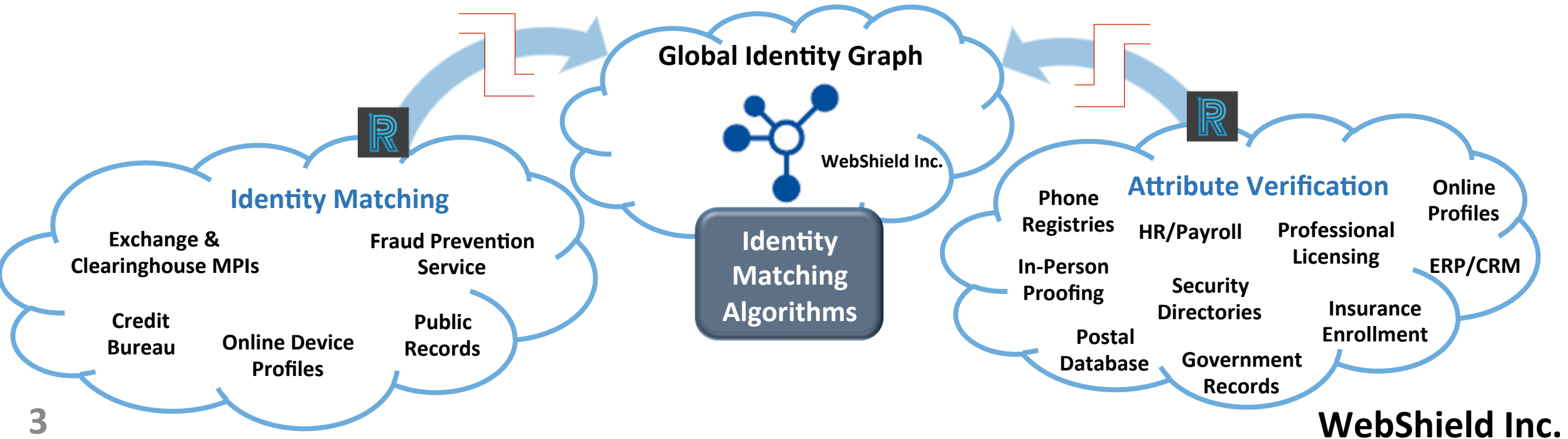
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Breakthrough Innovation allows **frictionless pooling** and analysis of regulated & proprietary data

Privacy Network (WebShield)

- "Neutral Zone" where policies of consumer and each original source of data are simultaneously enforced.
- All data is encrypted and anonymized at source.
- Supports arbitrary data pooling and computation without revealing any information to anyone.
- No one has "keys" to breach privacy or security.
- Allows consumers to prove their identity and attributes without revealing the data used to do so.
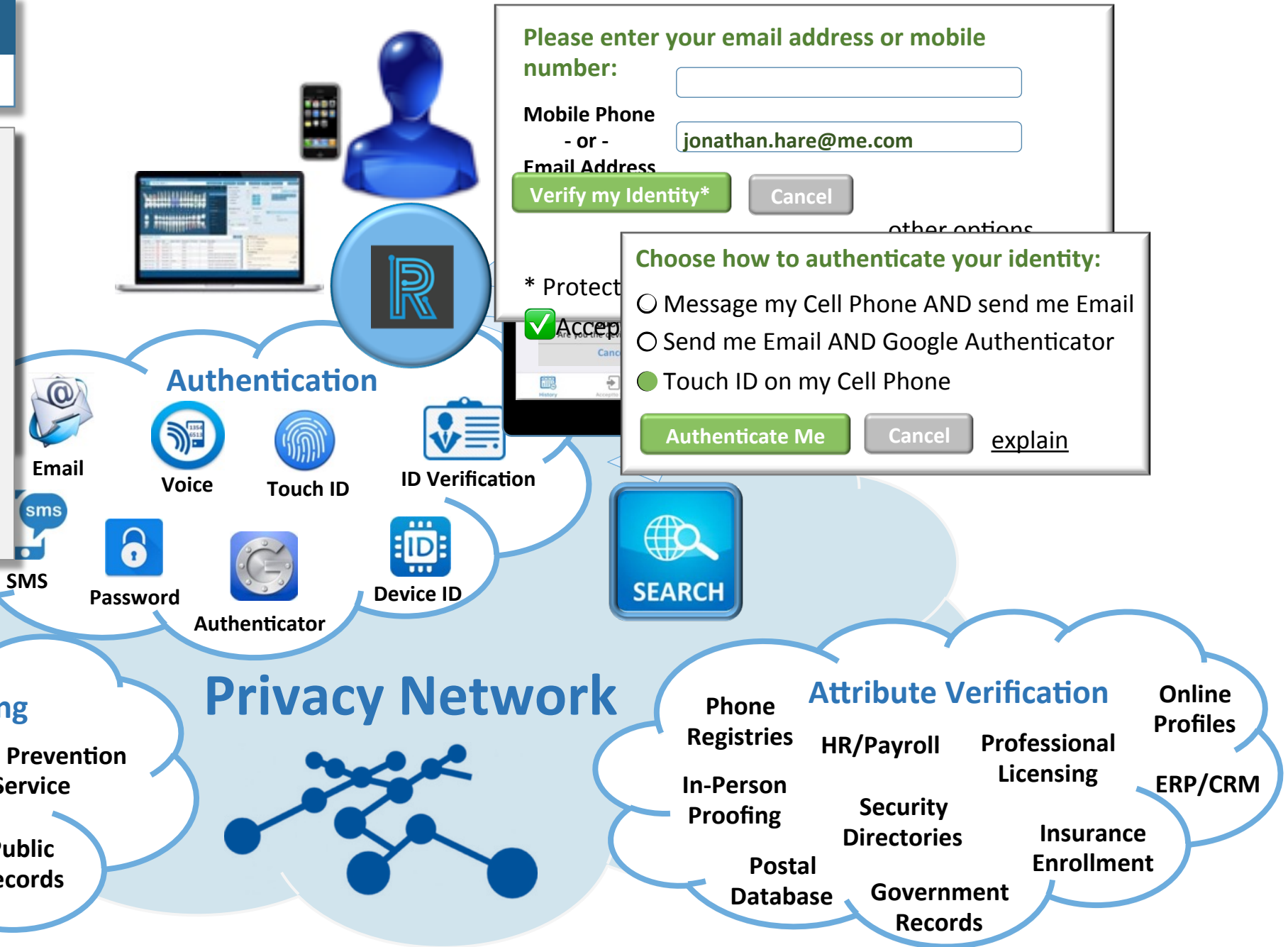
Unified Trust Model

- Attribute level enforcement of diverse trust criteria (regulatory compliance, commercial terms, etc.)
- Cloud-based enforcement by neutral authorities.
- Trust criteria automatically inherited by any aggregates, analytic outputs or user responses.
- Allows data with disparate regulatory requirements (HIPAA, GLBA, IRS 6103, EU Data Protection, etc.) and commercial terms to be pooled and analyzed.

Identity Matching

Exchange & Clearinghouse MPIs

Fraud Prevention Service

Credit Bureau

Online Device Profiles

Public Records

Attribute Verification

Phone Registries

HR/Payroll

Professional Licensing

Online Profiles

In-Person Proofing

Security Directories

ERP/CRM

Postal Database

Government Records

Insurance Enrollment

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Privacy Preserving Trusted Identities

- Frictionless and Free
- Unprecedented Privacy
- Unmatched Accuracy
- Unlimited Scale
- Built-in Compliance
- Neutral Governance
- Open Architecture

Please enter your email address or mobile number:

Mobile Phone
- or -
Email Address

jonathan.hare@me.com

Verify my Identity*   Cancel

other options

* Protect

✅ Accept

Choose how to authenticate your identity:

○ Message my Cell Phone AND send me Email
○ Send me Email AND Google Authenticator
● Touch ID on my Cell Phone

Authenticate Me   Cancel   explain

Authentication

Email

Voice

Touch ID

ID Verification

SMS

Password

Authenticator

Device ID

SEARCH

Privacy Network

Identity Matching

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- **Patient-controlled (no longer covered by HIPAA)**
- **Comprehensive Longitudinal Records**
  - claims, labs, clinical, genomic, proteomic, etc.
  - device, self-reported, demographic, etc.
  - linked and reconciled through time, across disparate sources
- **Available on-demand for any use authorized by Consumer**
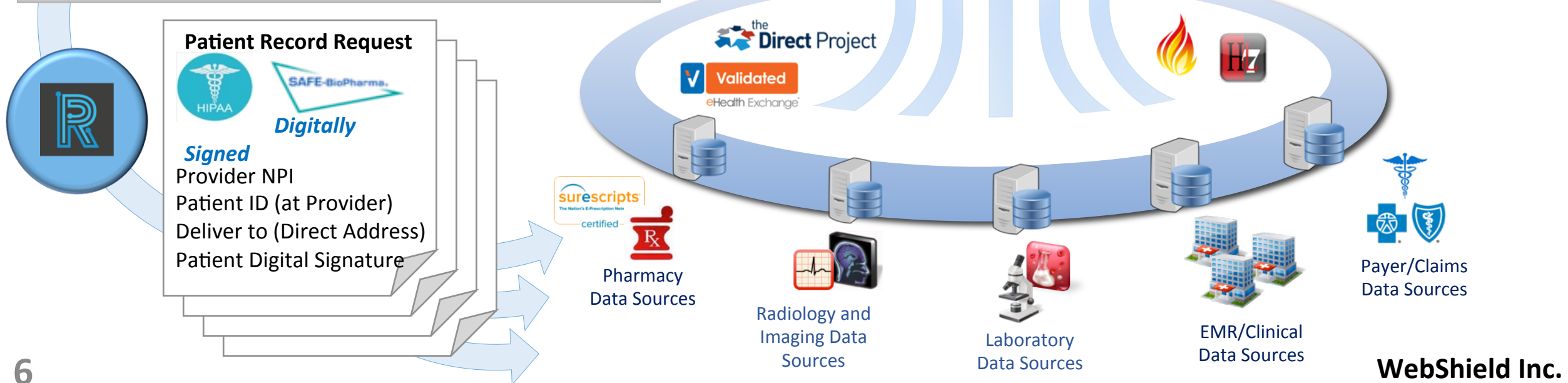
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Personalized Care Management

Consumer Authorization

SAFE-BioPharma.

Personal Cloud Storage

- Multi-encrypted and anonymised.
- Precision enforcement of regulatory compliance, privacy and commercial policies of all stakeholders.

Free Health Services   News & Advocacy   Members   Contribute

Buena Salud® Club puts you in control of which online services can access your health Information. The **National Alliance For Hispanic Health's** Expert Panel recommends these personalized services powered by the Privacy Network:

✅**Personal Health Concierge** helps you find the best healthcare providers and services, makes sure they are covered by your health plan, and allows them to securely use your health information. (explain)

✅**Patient Safety Watch** sends de-identified health information to a privacy preserving analytics service to detect potential health risks, and gives you and your clinicians personalized alerts and health advice. (explain)

✅**Paperwork Assistant** automates routine paperwork, and finds discounts, benefits and free services you are eligible for. (explain)

✅**My Clinical Researcher** provides personalized health education materials, and tells you about clinical research studies that you are eligible for. (explain)

Activate these services   Not now   Never

the Direct Project

Validated eHealth Exchange

H7

Pharmacy Data Sources

Radiology and Imaging Data Sources

Laboratory Data Sources

EMR/Clinical Data Sources

Payer/Claims Data Sources

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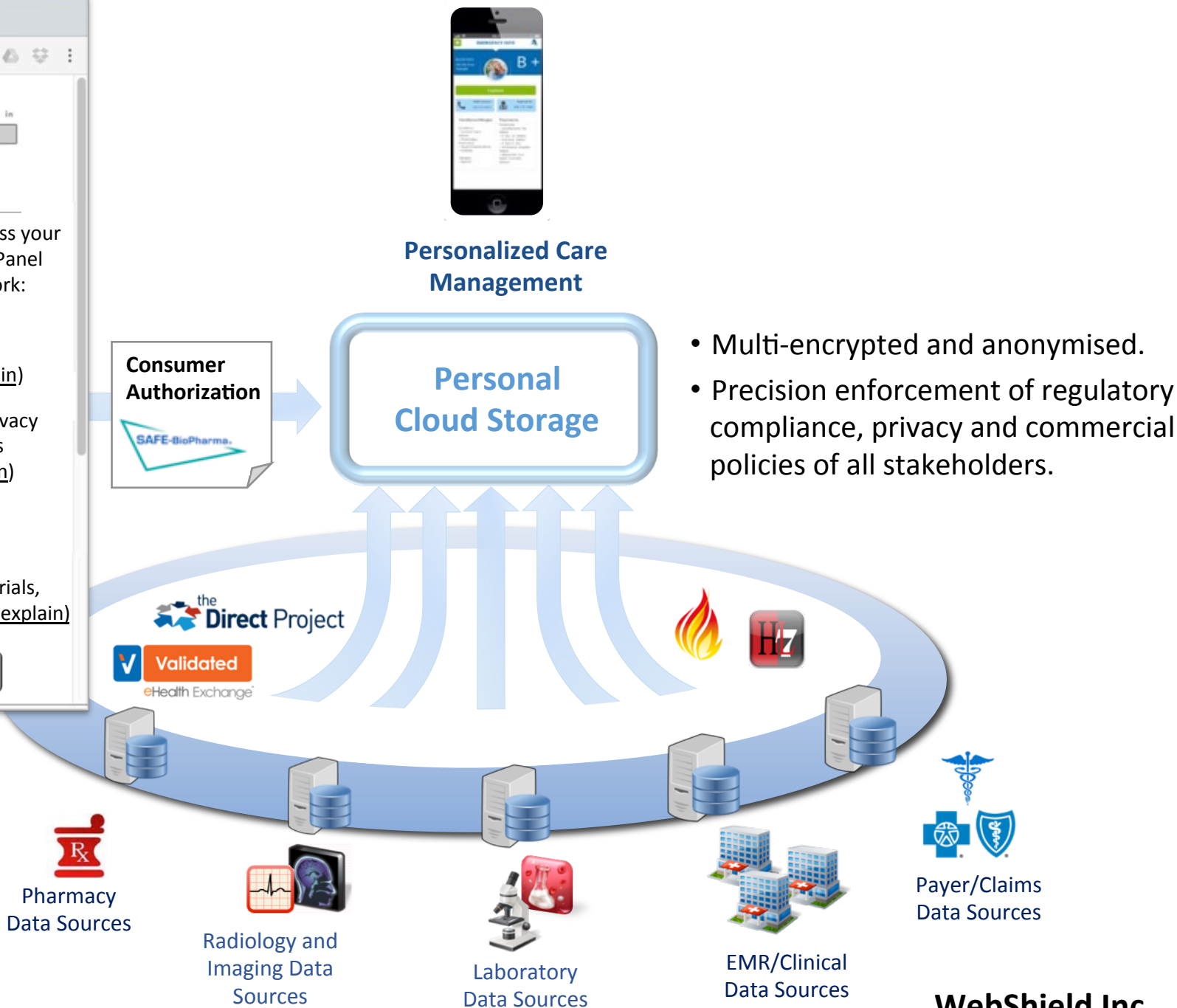
eP^3 Network is a consortia of non-profits, commercial vendors and individuals dedicated to empowering people with the ability to access and authorize the use of their information, while rigorously protecting their privacy. This is a parallel effort to be unveiled at the **Health 2.0 conference on September 27th**.

eP^3's non-profit and vendor partners have agreed to support the HEART Challenge with in-kind resources, and to drive adoption by their members, partners and customer ecosystems.

Non-Profit and Trust Governance Launch Partners

Digital Signatures and Identity Credentials

National Association for Trusted Exchange – Consumer Mediated Health Information

Community Services, Outreach, Healthcare Research and Advocacy (affiliates reach 15 million Hispanics in US.)

Cardiovascular Clinical Research and Education

Clinical Research and Advocacy

The Internet Keep Safe Coalition – Children's Online Safety and Privacy Certifications

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SAFE's Trust and Identity Ecosystem

SAFE-BioPharma Digital Signatures and Identity Credentials:

- Compliant with EU/EMA requirements for digital signatures - recognized by FDA, DEA and EMA
- Includes governance framework for global legal enforceability, risk mitigation, non-repudiability, instantly auditable
- Meets US Department of Commerce and EU Privacy Shield requirements for personal data protection

Members

Partners

Intersystems' Data Interoperability Ecosystem

InterSystems
Health | Business | Government

BEST IN KLAS 2015/2016 — **#1** Rated EMR Independent HIE Platform

BEST IN KLAS 2015/2016 — **#1** Rated Global Electronic Medical Record

InterSystems **technology** manages **67%** of patient records in the USA

InterSystems **EMR** manages **100m+** patient records **world-wide**

IDNs and Payers

CEDARS-SINAI
KAISER PERMANENTE
St.Joseph Health — St. Joseph Hospital
New York State Office of Mental Health
PARTNERS HEALTHCARE
Baystate Health
MEMORIALCARE HEALTH SYSTEM — Excellence in Health Care
healthfirst

Regional, State, National HIE

HIE Texas
Rhode Island Quality Institute
Healthix
NYeC NEW YORK eHEALTH COLLABORATIVE
One Health Record®
MISSOURI HEALTH CONNECTION
STATENS SERUM INSTITUT
NSI
HIXNY HEALTHCARE INFORMATION XCHANGE New York
NSW GOVERNMENT

Software

OPTUMHealth
MEDecision
Epic
3M
GE
sunquest
Netsmart Technologies
McKESSON — Empowering Healthcare

US Federal and International

Veterans Affairs
US DoD
Indian Health Srv
Netherlands
UK
Sweden

InterSystems HEALTHSHARE

- Composite Health Record
- Consent Management
- Terminology Management
- eHealth Exchange Gateway
- Clinical Message Delivery
- Audit Services (ATNA)

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the Direct Project
Validated eHealth Exchange
IHE Integrating the Healthcare Enterprise

ICSA labs CERTIFIED IHE USA 2014
Drummond certified
surescripts certified
ONC Certified HIT

Radiology and Imaging
Pharmacy
Laboratory
EMR/Clinical
Claims