GS1 AIDC in Healthcare

Ask the Experts - GS1 DataMatrix, GS1 Healthcare Demo Scanner & "Intelligent Packaging"

GS1 Healthcare Conference – Copenhagen
22 October 2014

Consumers have become “digital” …and this also true for Healthcare…

- **36%** of the world’s population owns a “smartphone”
  (Nielsen, 2011)
- **50%** of all retail sales are web-influenced
  (Forrester, 2011)
- **80%** of consumers use social networks to research new products
  (IBM, 2012)

Considering the growth in consumer use of smartphones to access product information, it can easily be seen how these “B2C” (Business to Consumer) & mobile technologies might be applied in Healthcare…

Intelligent – Smart – Active Packaging…

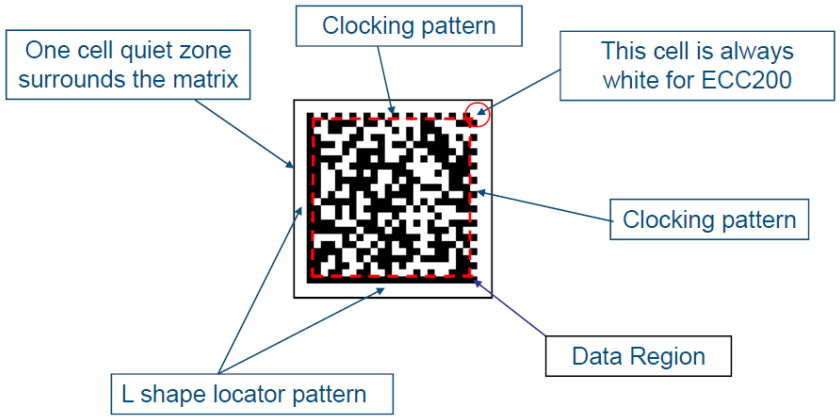
- So… what -IS- “intelligent” packaging…
  - “Active”, “intelligent” or “smart” packaging refers to **packaging used with** foods, **healthcare items**, and other types of products. Can help extend shelf life, **monitor freshness**, provide info on **quality and product use, improve safety**, and improve convenience.
  - “Active” packaging usually means having active functions beyond “inert” or passive containment and protection of the product.
  - “Intelligent” or “smart” packaging usually involves the ability to sense or measure an attribute of the product, the inner atmosphere of the package, the shipping environment or **gather additional information**. This **information can be retrieved by, or communicated, to users** or can even trigger active packaging functions.
  - Depending on the practical definitions, some traditional types of packaging might be considered as "active" or "intelligent". More often, the terms are used with **new technologically & systems**: microelectronics, computer applications, nanotechnology, **AIDC**, etc.

GS1 DataMatrix is capable…

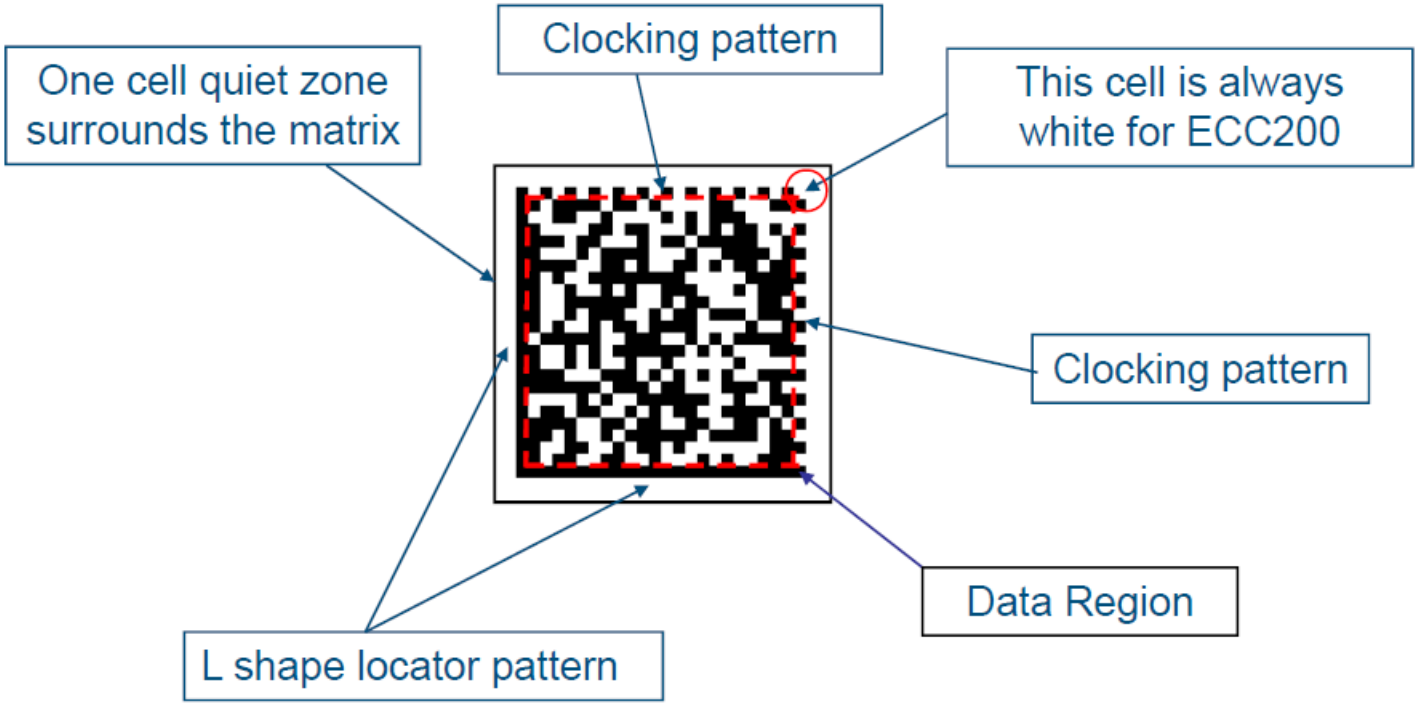
- GS1 DataMatrix is the preferred two-dimensional (2D) matrix bar code symbology for use in Healthcare to efficiently meet the needs of our pharmaceutical and medical device members. Its use:
  - Allows the encoding & marking of larger amounts of data within smaller spaces
  - Allows printing of both static product identification (i.e. GTINs) and dynamic production information (i.e. AIs) in a bar code data carrier, at production & packaging rates
  - Has inherent error detection and correction capabilities for increased robustness in use
  - Well suited to and proven in applications where direct part marking is needed
  - **Also allows encodation of URLs for accessing trusted product data and use information… i.e. enabling "intelligent packaging" in Healthcare**

GS1 DataMatrix is capable…

- General Components of 2D Symbologies
  - Finder Patterns
    - Robustness & Weakness
  - Data Region(s)
    - Balanced by amount of Error Detection & Correction
  - Error Correction Region(s)
    - Balanced by amount of Error Detection & Correction



GS1 DataMatrix features…



- ISO/IEC 16022 Data Matrix… used as “GS1 DataMatrix”:
  - Special considerations?
    - Similar to the Code 128 / GS1-128 “relationship”, an FNC1 in the first data position signals GS1 formatted data & a **GS1 DataMatrix**
    - Is always “ECC 200” & Alpha-Numeric encodation capable
    - GS1 DataMatrix has a specific ISO/IEC Symbology Identifier

GS1 DataMatrix Symbology

GS1 DataMatrix
An introduction and technical overview of the most advanced GS1 Application Identifiers compliant symbology

This document facilitates processes by offering detailed information on GS1 DataMatrix and its technical characteristics encoding, printing and reading. It is a repository of reference information that can support the implementation of GS1 DataMatrix in any sector, industry or country.

http://www.gs1.org/services/publications/online/

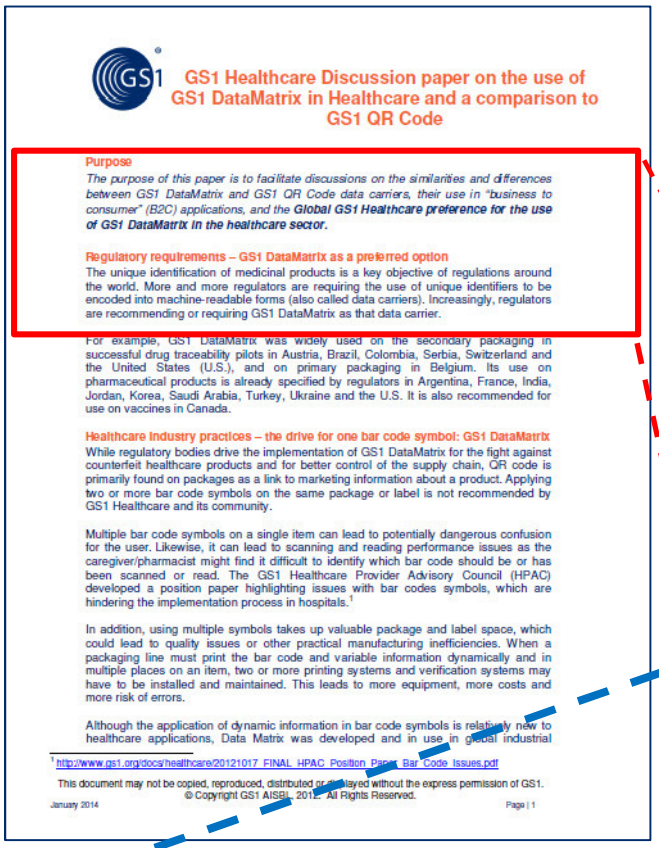
GS1 DataMatrix…

- For more information on the benefits of DataMatrix, read:

http://www.gs1.org/sites/default/files/docs/healthcare/MC07_GS1_Datamatrix.pdf

http://www.gs1.org/sites/default/files/docs/healthcare/GS1%20QR%20DM%20discussion%20paper_20140113_FINAL.pdf

Discussion - GS1 DataMatrix & GS1 QR…
(GS1 2014)



GS1 Healthcare Discussion paper on the use of GS1 DataMatrix in Healthcare and a comparison to GS1 QR Code

Purpose

The purpose of this paper is to facilitate discussions on the similarities and differences between GS1 DataMatrix and GS1 QR Code data carriers, their use in "business to consumer" (B2C) applications, and the ***Global GS1 Healthcare preference for the use of GS1 DataMatrix in the healthcare sector.***

Regulatory requirements – GS1 DataMatrix as a preferred option

The unique identification of medicinal products is a key objective of regulations around the world. More and more regulators are requiring the use of unique identifiers to be encoded into machine-readable forms (also called data carriers). Increasingly, regulators are recommending or requiring GS1 DataMatrix as that data carrier.

For example, GS1 DataMatrix was widely used on the secondary packaging in successful drug traceability pilots in Austria, Brazil, Colombia, Serbia, Switzerland and the United States (U.S.), and on primary packaging in Belgium. Its use on pharmaceutical products is already specified by regulators in Argentina, France, India, Jordan, Korea, Saudi Arabia, Turkey, Ukraine and the U.S. It is also recommended for use on vaccines in Canada.

Healthcare industry practices – the drive for one bar code symbol: GS1 DataMatrix

While regulatory bodies drive the implementation of GS1 DataMatrix for the fight against counterfeit healthcare products and for better control of the supply chain, QR code is primarily found on packages as a link to marketing information about a product. Applying two or more bar code symbols on the same package or label is not recommended by GS1 Healthcare and its community.

Multiple bar code symbols on a single item can lead to potentially dangerous confusion for the user. Likewise, it can lead to scanning and reading performance issues as the caregiver/pharmacist might find it difficult to identify which bar code should be or has been scanned or read. The GS1 Healthcare Provider Advisory Council (HPAC) developed a position paper highlighting issues with bar codes symbols, which are hindering the implementation process in hospitals.[1]

In addition, using multiple symbols takes up valuable package and label space, which could lead to quality issues or other practical manufacturing inefficiencies. When a packaging line must print the bar code and variable information dynamically and in multiple places on an item, two or more printing systems and verification systems may have to be installed and maintained. This leads to more equipment, more costs and more risk of errors.

Although the application of dynamic information in bar code symbols is relatively new to healthcare applications, Data Matrix was developed and in use in global industrial

[1] http://www.gs1.org/docs/healthcare/20121017_FINAL_HPAC_Position_Paper_Bar_Code_Issues.pdf

Reinforcing the GS1 Global Healthcare direction for **ONE** 2D Matrix data carrier… **GS1 DataMatrix**…

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GS1 DataMatrix in Healthcare…

Find more information & support in the GS1 Global Healthcare **Resource Library**…

Check out: http://www.gs1.org/healthcare/library#publications

GS1 Healthcare and B2C eHealth…

To go “beyond” the theoretical…

- and provide real time demonstration of the potential of B2C (Business to Consumer) technology in Healthcare

A “proof of concept demonstration tool” was needed…

- in the form of a “smartphone app” (iOS & Android)
- utilizing GS1 DataMatrix in a single symbol use case
- using the GS1 “Extended Packaging” AI(8200) for URLs
- with printed “generic” (“dummy”) demonstration healthcare trade item packs to scan

To **PRIMARILY** show access to a Manufacturer’s website for specific, trusted, product & product use information…

- but **can** also secondarily show capabilities of…
  - GTIN authentication & GEPIR look-up
  - Data format verification

GS1 Healthcare and B2C eHealth…

- **NOT** a commercial app / product…
- A Healthcare specific **DEMO** app only…
  - to show our Healthcare members, users & GS1 Member Organizations, from a practical basis, how smartphones & B2C technologies (aka "MobileCom") can be applied in Healthcare to:

    …enable access to eIFU/ePI (Electronic Instructions for Use / Electronic Package Inserts) for pharmaceuticals & medical devices, including product use videos (as needed or required)

    …enable access to other "encoded data" about a product such as GTIN, Batch/Lot, Expiry, Serial Number, etc. (as needed)

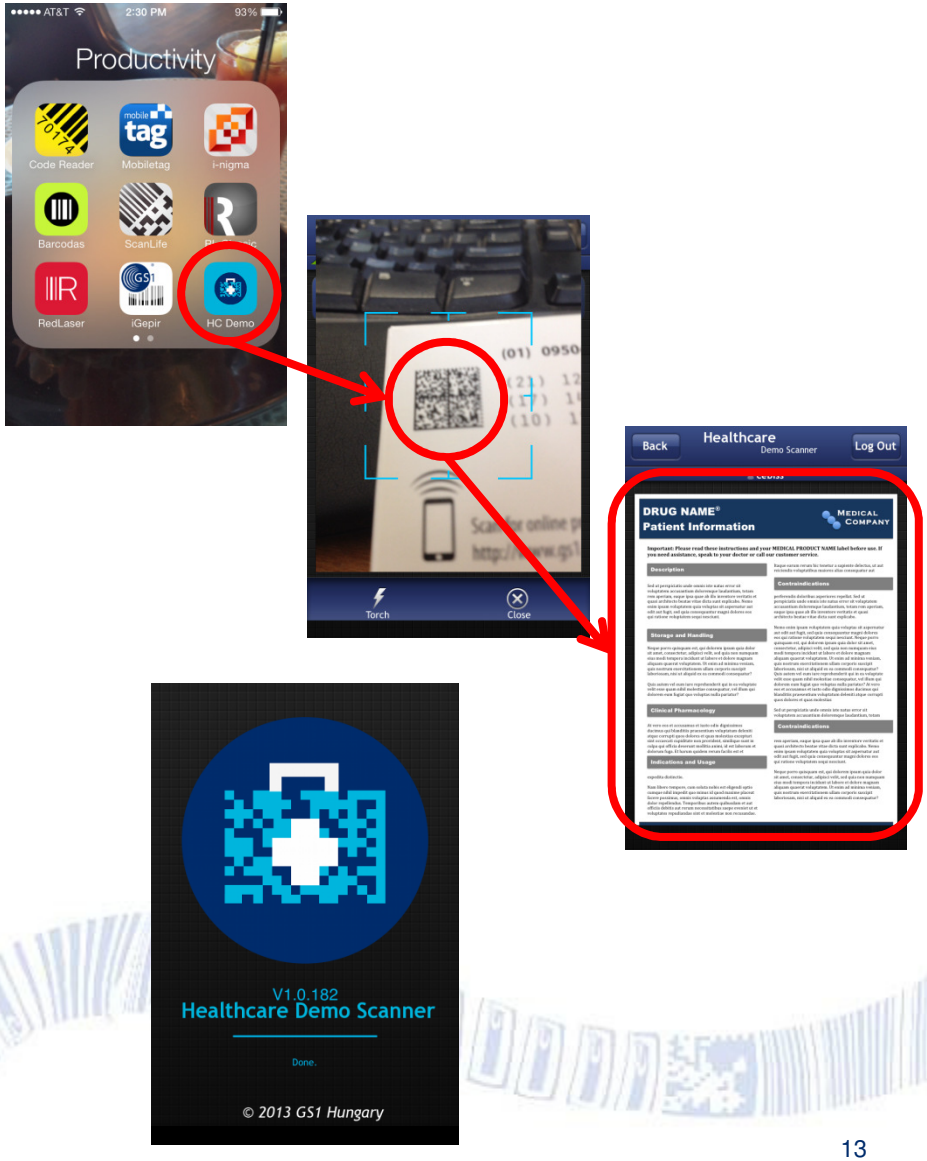
    …enable this access through the use of GS1 DataMatrix

    …show that an additional data carrier is not "needed"… allowing avoidance of "multiple symbols" on a label / package

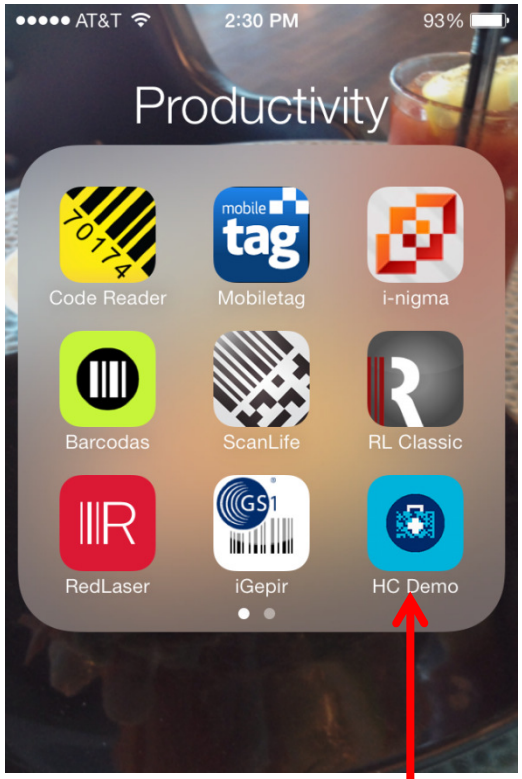
“Healthcare Demo Scanner” App…

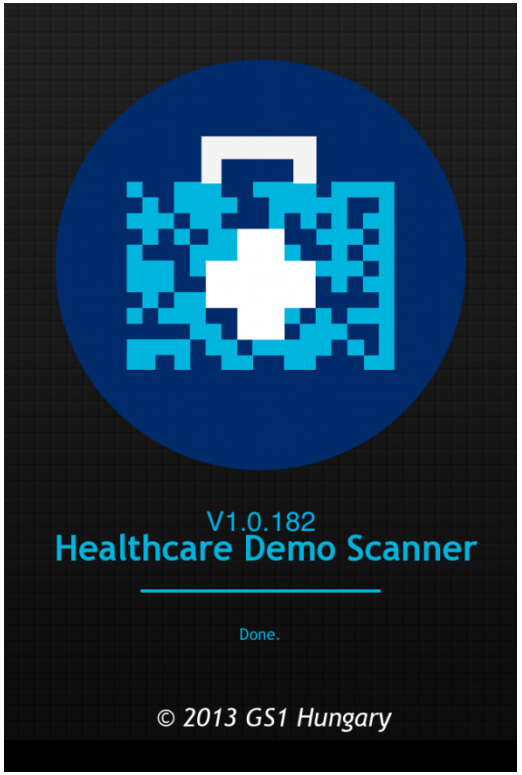
Mobile Access to “Product Instructions in Healthcare”

- “Proof of Concept” Demonstration tool developed for Healthcare in collaboration with GS1 Hungary in response to Global HC Member requests…
- Enables a smartphone to read a GS1 DataMatrix and access Manufacturer or Regulated product information (eIFU/ePI)…
- Now released for use… iOS & Android
- For more information contact GS1 Healthcare…



What “HDS” looks like…





GS1 Healthcare URL Access Demo App

Healthcare Demo Scanner is intended for your and your trading partners’ use, to show the advantages of *GS1 DataMatrix* when used in healthcare applications for Automatic Identification and Data Capture (AIDC) marking of trade items for:

- retrieval of standardized identification numbers for access to controlled databases

- retrieval of variable or dynamic data (i.e. expiry dates, lot / batch numbers, serial numbers, etc.)

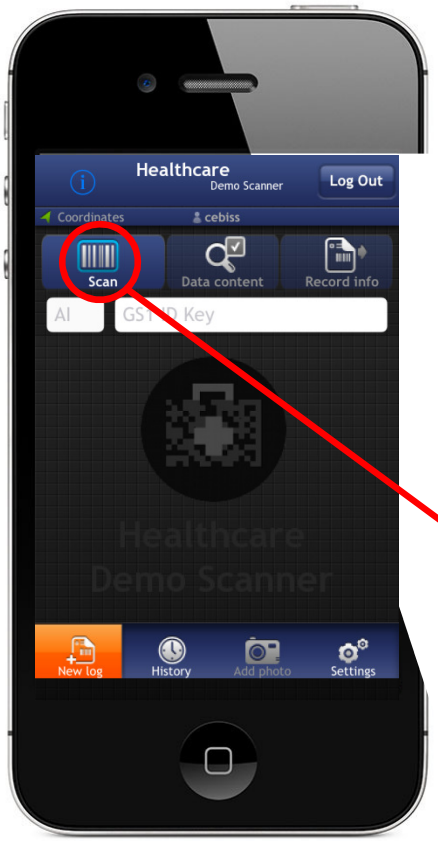
- direct access to controlled webpages containing product information (i.e. general information, Electronic Information for Use, Electronic Package Inserts, use videos, etc.).

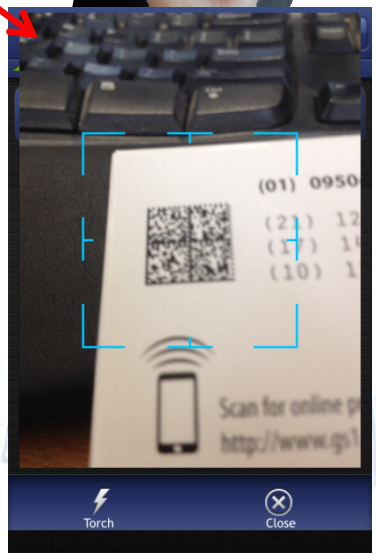
URL embedded in a GS1 DataMatrix…

GS1 DataMatrix “intelligent packaging mock-up”…

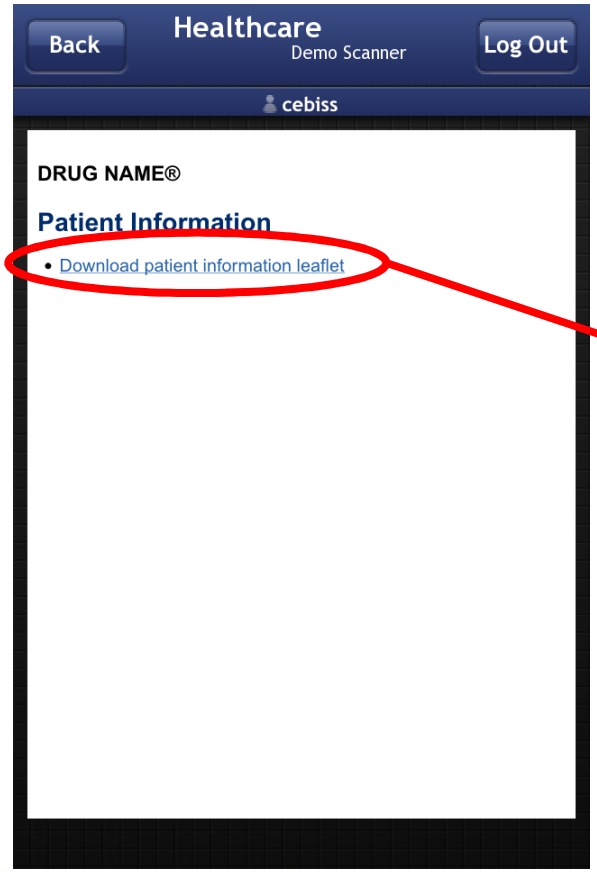
…GTIN, Expiry, Lot, Serial Number and URL data content

Simple automatic scanning…

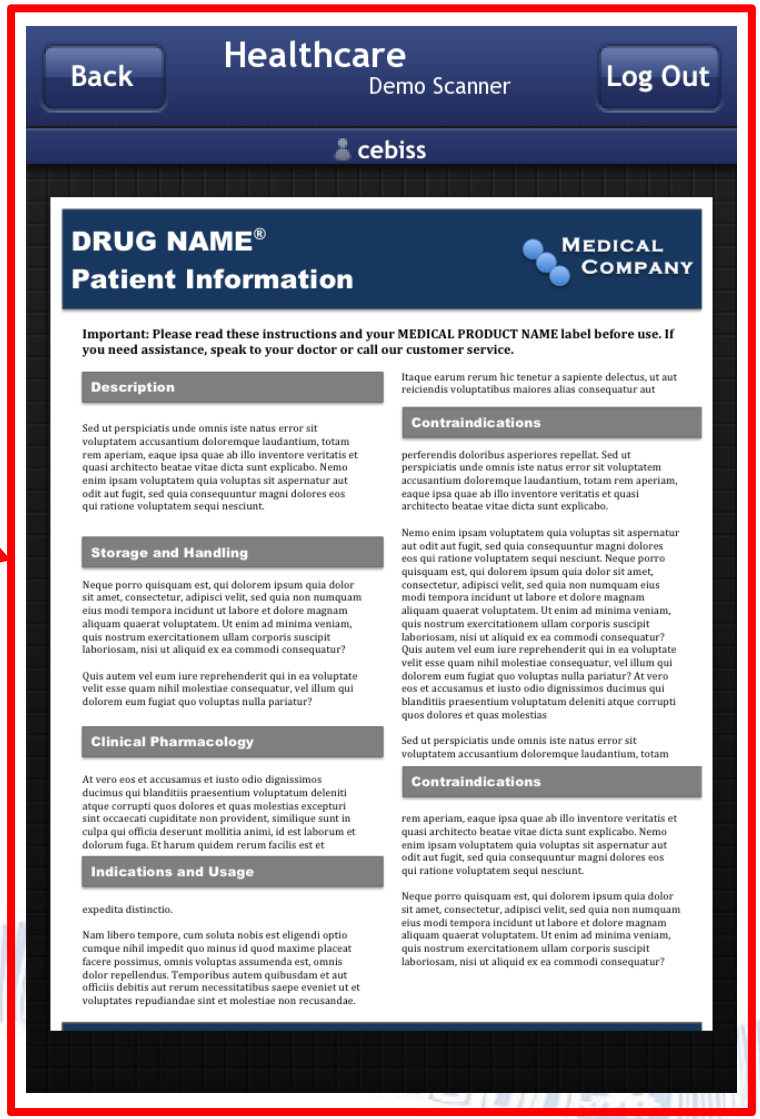




Landing page and info access…

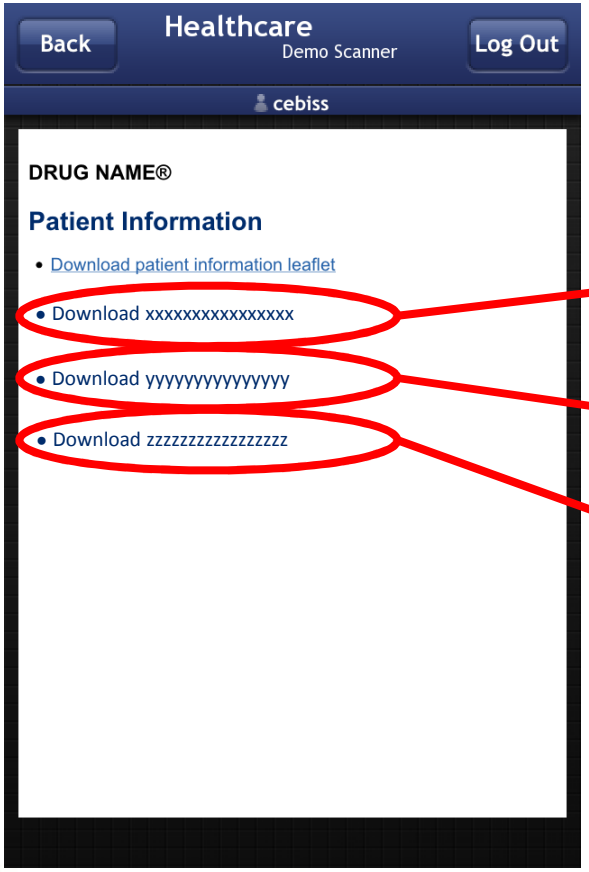


Direct URL access…



Potential for additional access

…from the Healthcare product side…



…such as:

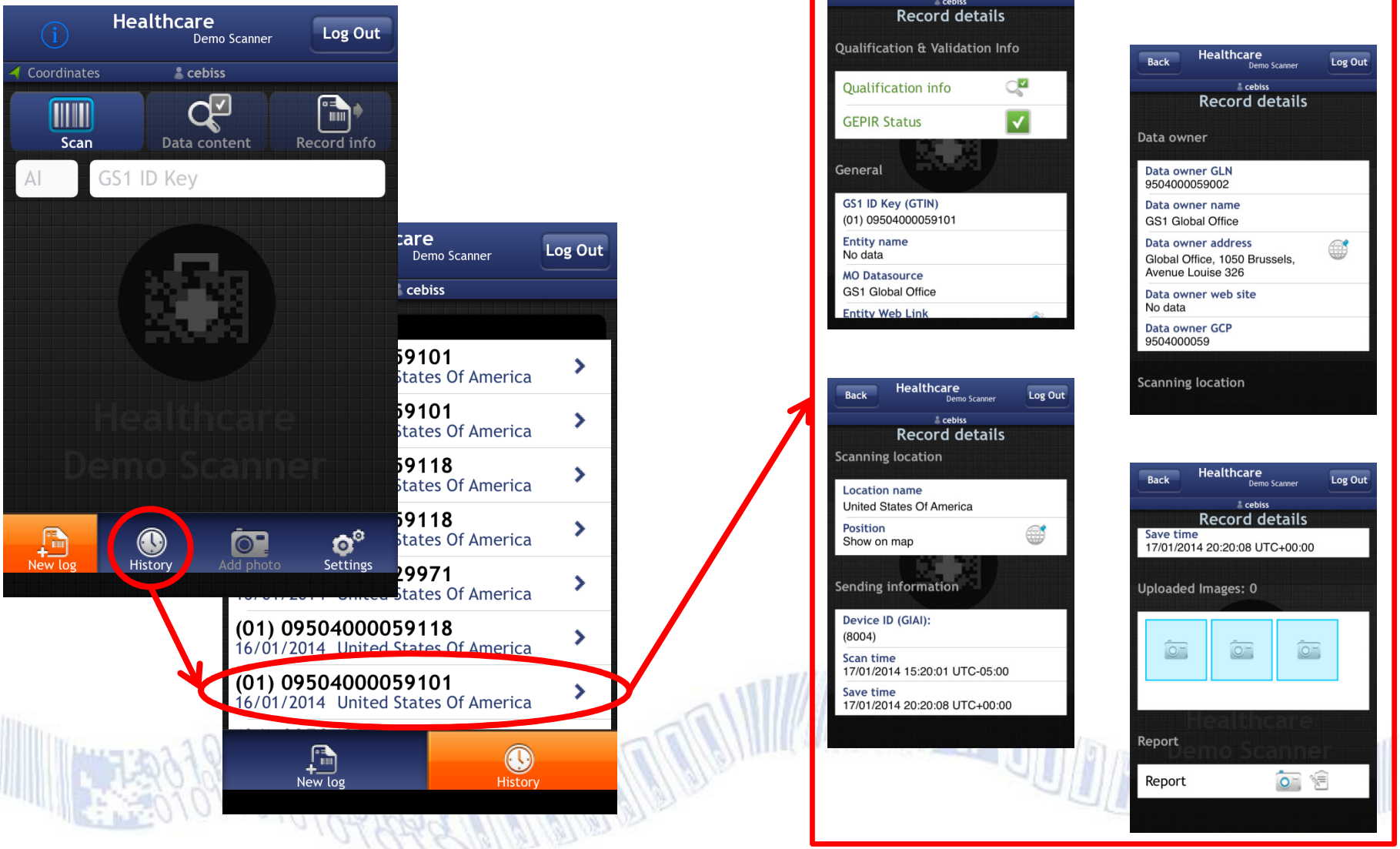
- Product use & information videos
- Product marketing information
- Information contact details
- etc.

With data format & structure analysis

…GS1 System compliance demonstrated…

And scanning history

…if you need to review…



“HDS” App in review…

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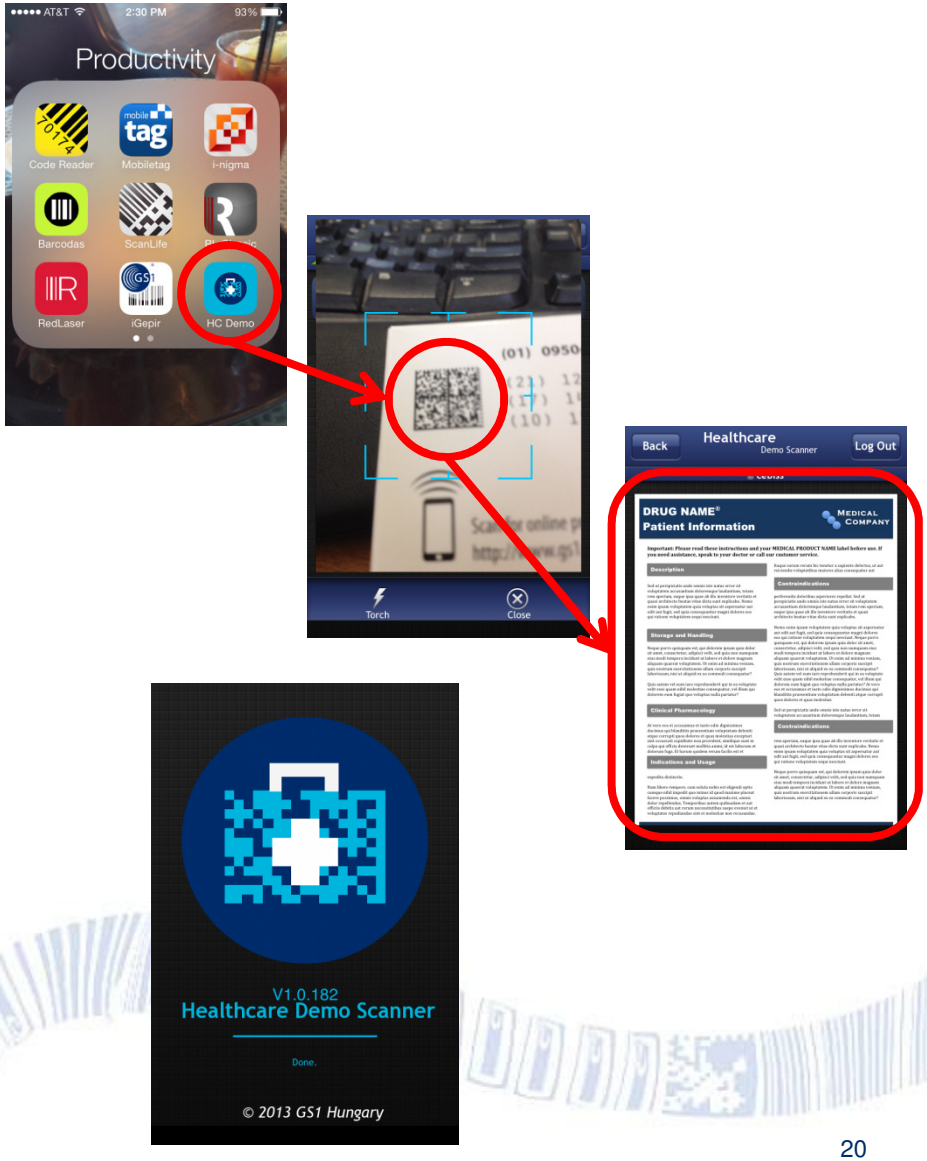


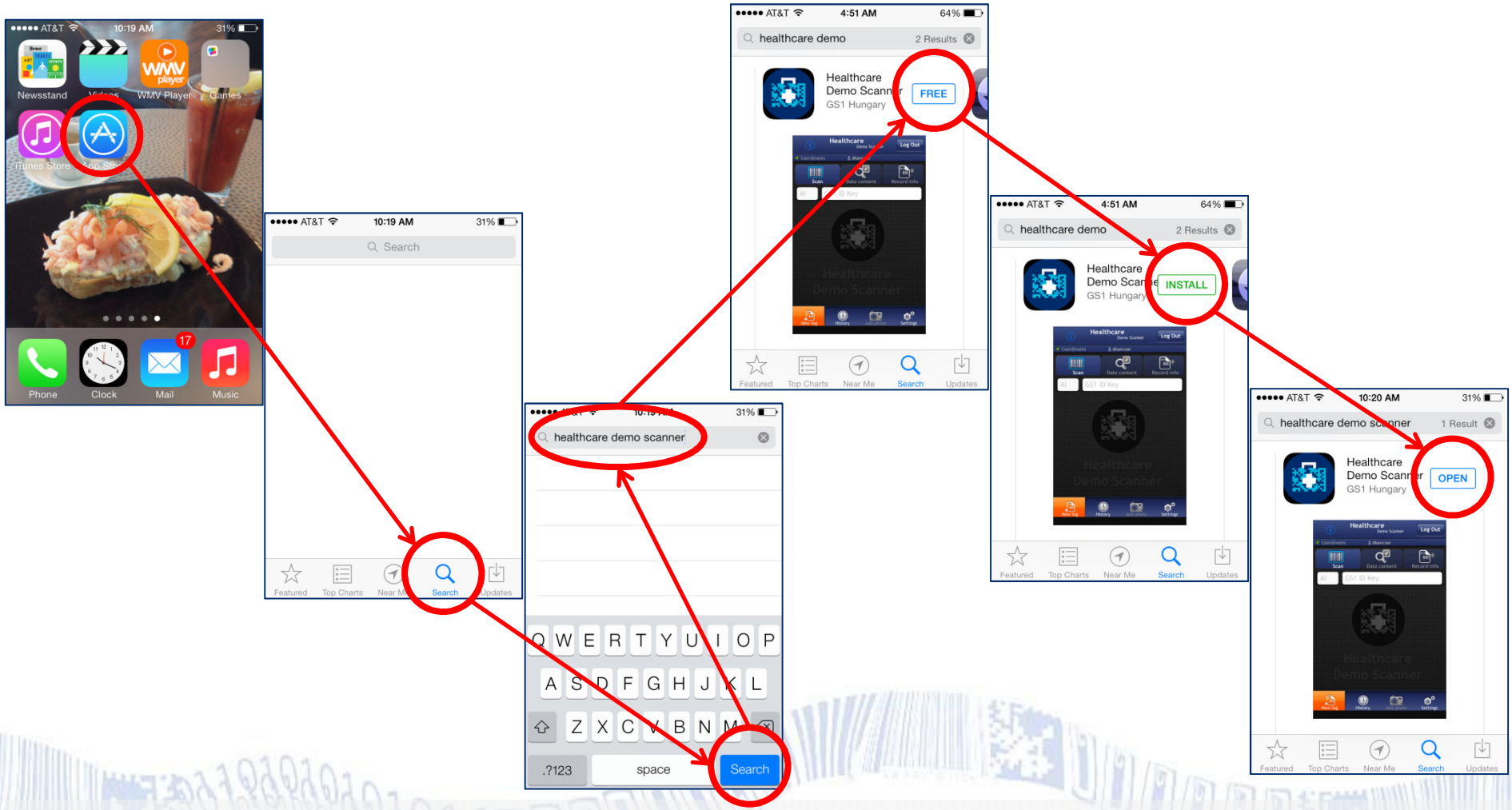
Current use & users…

- Number of registered external companies: **65**
- Some of the Healthcare member companies:
  - Bayer Pharma AG, GE Healthcare, Merck & Co., Inc., Pfizer, Hospital Sírio-Libanês, Region Hovedstadens Apotek, Siemens, United Medical, Videojet, Kantonsspital Winterthur, Abbott Laboratories Inc., B. Braun Medical Inc., GlaxoSmithKline (GSK), etc.
- Number of users from external companies: **186**
- Number of GS1 MOs registered: **41**
- Number of registered GS1 colleagues: **291**

“HDS” leaflet available…

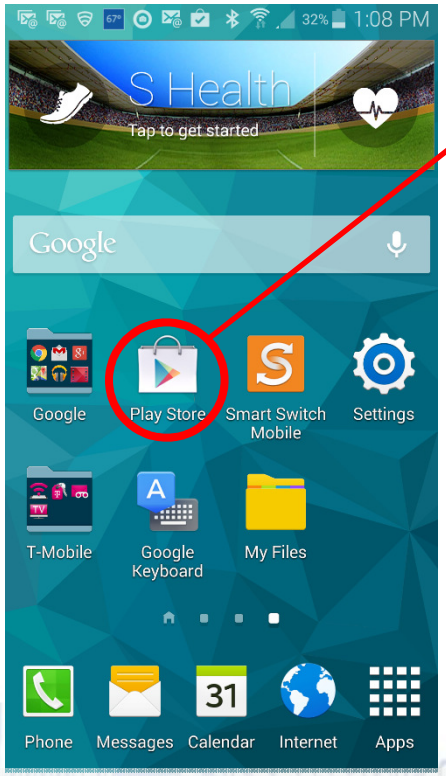
Check out:
http://www.gs1.org/sites/default/files/docs/healthcare/Healthcare%20Demo%20Scanner_final.pdf

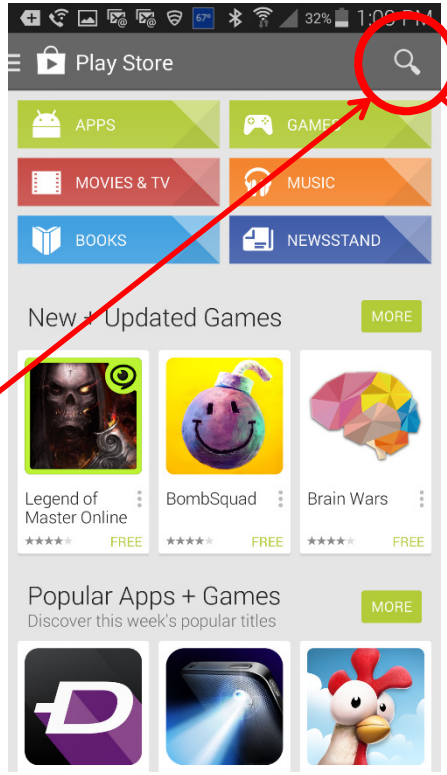
Download, register, login & scan… now…

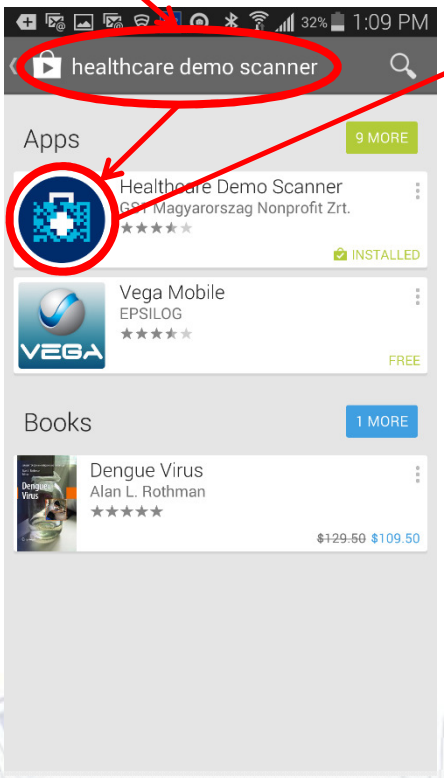


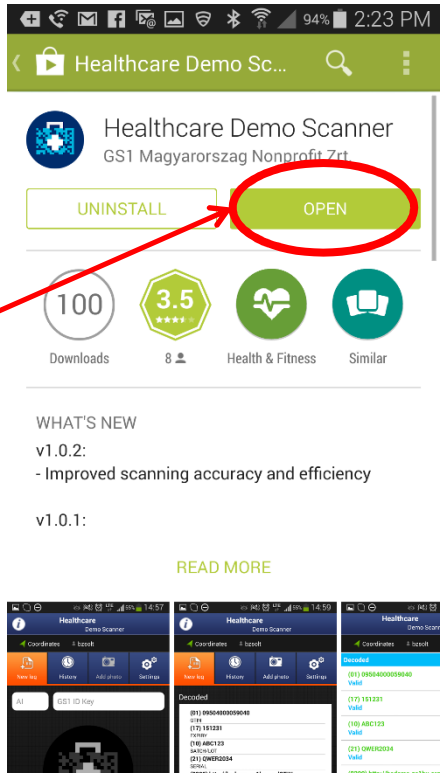
For the iOS version… click on the "App Store" icon, search for "Healthcare Demo Scanner", click "FREE", click "INSTALL", click "OPEN" & follow the registration process…

Download, register, login & scan… now…









For the Android version… click on the "Play Store" icon, search for "healthcare demo scanner", click on the HDS "logo", click "INSTALL", open, follow & register…

Contact Details

GS1 Healthcare
Chuck Biss - GS1 Global Office
T + 1 (315) 252-5941
M +1 (315) 480-2034
E chuck.biss@gs1.org