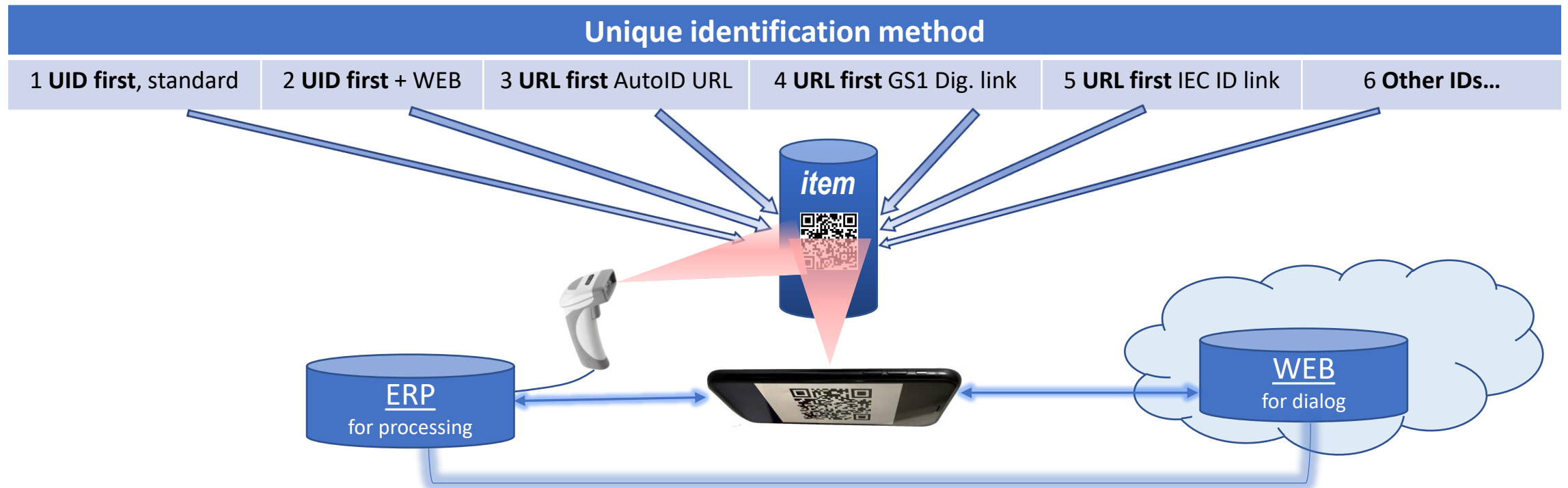
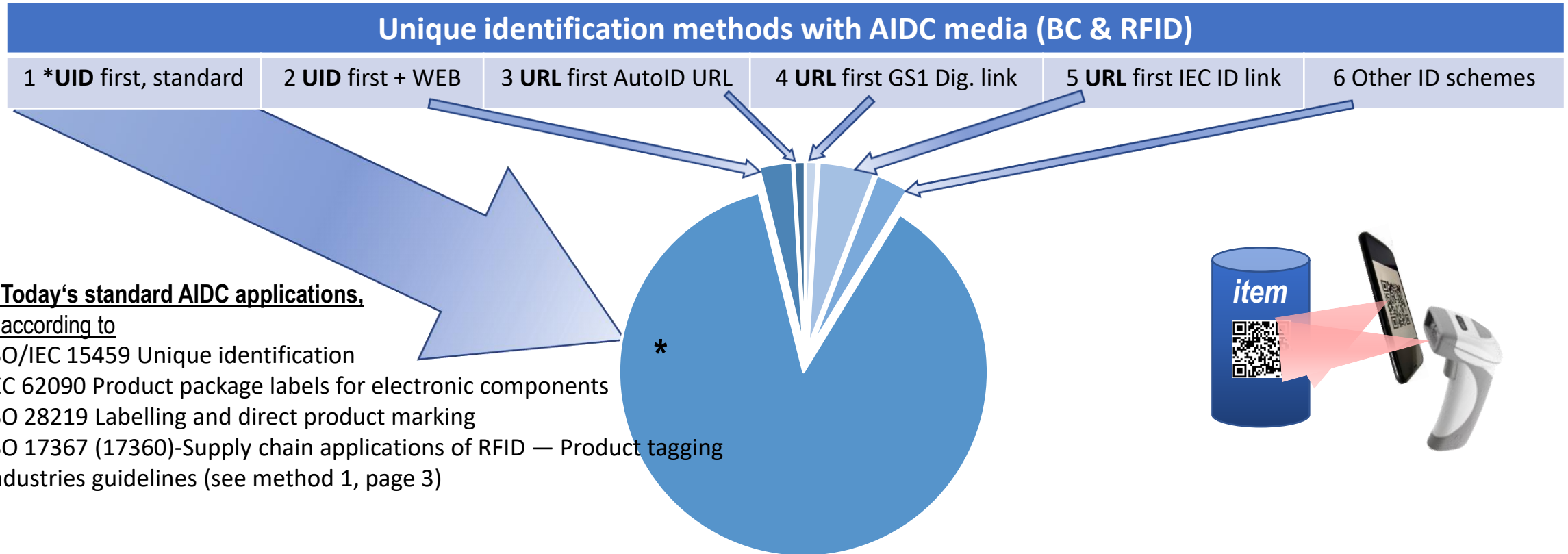


Unique identification and WEB link METHODS

Extended research and considerations to methods suitable for the Digital Product Passport (DPP)
in response to the
Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
establishing a framework for setting ecodesign requirements for sustainable products,
Brussels, 30.3.2022 COM(2022) 142 final, 2022/0095 (COD)



Unique identification and WEB link Methods for today and tomorrow



* **UID**: Unique ID according to ISO/IEC 15459 Unique Identification and ISO/IEC 15418 GS1 Application Identifiers and ASC MH Data Identifiers

Unique identification and WEB link

METHOD 1: "UID first", WEB access via APP support


Unique identification method

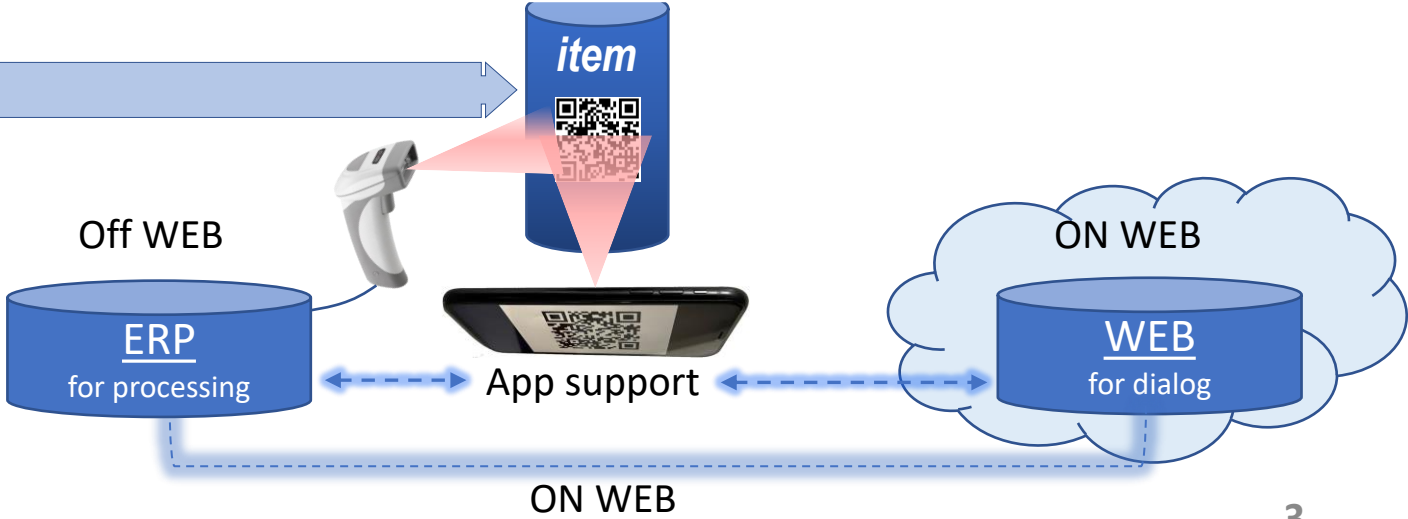
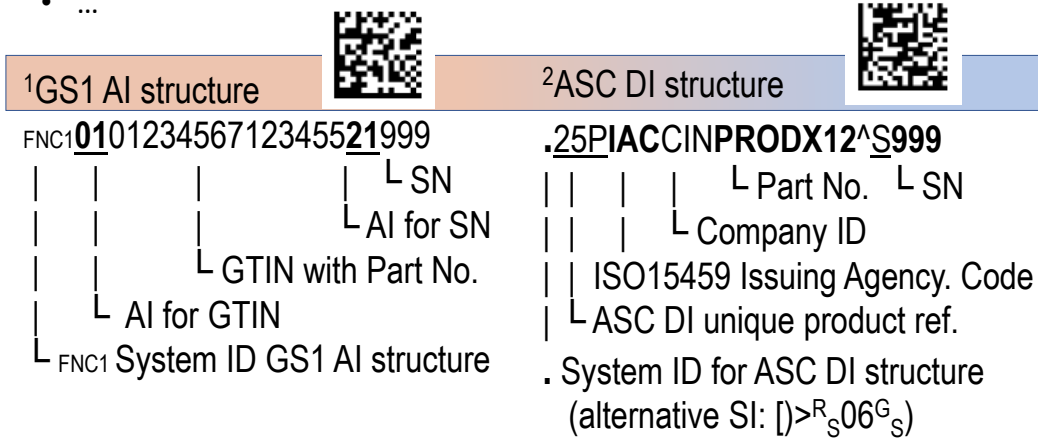
1 UID first, standard	2 UID first + WEB	3 URL first AutoID URL	4 URL first GS1 Dig. link	5 URL first IEC ID link	6 Other Ids ...
-----------------------	-------------------	------------------------	---------------------------	-------------------------	-----------------

Application VERY HIGH since the 90th:

All industries, e.g

- Air & space.
- Automotive and suppliers
- Chemical
- Consumables
- Electro, electronic
- Engineering
- Healthcare (UDI, PPN, ...)
- ...


Standard „UID first“ based on ISO/IEC 15418 and ISO/IEC 15459	Example with
ISO/IEC 15459-4 Unique identification: Individual products (support by ~40 ISO/IEC 15459-2 Issuing Agencies and its registered CIN holders world wide)	¹ GS1 AIs: (01) GTIN + (21) SN ² ASC DIs: (25P) IAC.CIN, PN + (S) SN
ISO 28219 Labelling and direct product marking linear bar code and 2D	
ISO 17367 (17360)-Supply chain applications of RFID — Product tagging 	
+ Industry guidelines like LR05 Automotive for Barcode and RFID on item level	ASC DI: (37S) IAC CIN PN + SN




Unique identification and WEB link

METHOD 1: "UID first", WEB access via APP support



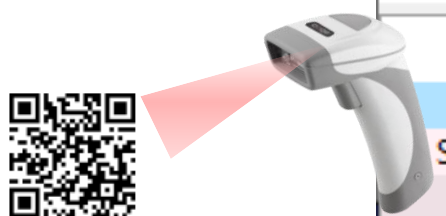
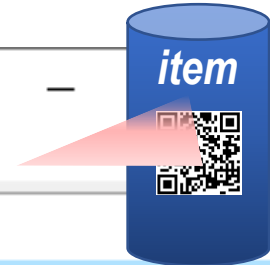
	jd2	GS1DataMatrix	Symbology type GS1DataMatrix passed by reader
Raw data:	0101234567123455 21999		
Structure type:	GS1	Application Identifier (AI) following ISO/IEC15418	
Packing index:	01	0	
Article:	123456712345		GTIN-14 product code Labeller ID Issuing Agency: GS1
Check character:	5	Modulo 10 check character correct	
Serial number:	21	999	
			▼ Result of last scan
Resume:			GS1 structure OK







	ID	Data	Comment
▼ Scan no. 1			
Symbology:	jd1	Datamatrix	Symbology type Datamatrix passed by reader
Raw data:	.25PIACCINPRODX12 ^S999		
Structure type:	.	ASC	Data Identifier (DI) following ISO/IEC15418 (with CSID '.')
Labeler:	25P	IACCIN	Labeller ID Issuing Agency: ISO/IEC 15459
Article:	PRODX12		
Serial number:	S	999	
			▼ Result of last scan
Resume:			ASC structure OK

Unique identification and WEB link

METHOD 2: "ISO/IEC 15459 UID first" - ERP and WEB compatible

	ID	Data	Comment
			<ul style="list-style-type: none"> Scan no. 1
Symbology:	JQ1	QR	Symbology type QR passed by reader
Raw data:		.25PIACCINPRODX12 ^S999^34LWWW.PORTAL-99/?SCAN=	
Structure type:	.	ASC	Data Identifier (DI) following ISO/IEC15418 (with CSID '.')
Labeler:	25P	IACCIN	Labeller ID Issuing Agency: ISO/IEC 15459
Article:		PRODX12	
Serial number:	S	999	
URL:	34L	WWW.PORTAL-99/?SCAN=	URL HTTP://WWW.PORTAL-99/?SCAN=25PIACCINPRODX12%1DS999
			<ul style="list-style-type: none"> Result of last scan
Resume:			ASC structure OK

Unique identification and WEB link

METHOD 3: "URL first" - WEB compatible + ERP parsing

Unique identification method

3 URL first AutoID URL	4 URL first GS1 Dig. link	5 URL first IEC ID link	6 Other IDs ...	1 UID first, standard	2 UID first + WEB
------------------------	---------------------------	-------------------------	-----------------	-----------------------	-------------------

„URL first“ WEB compatible + ERP parsing	Example with ASC DIs
AutoID URL 1.0: 2022 (biuniqueness by ISO/IEC 15459)	WEB addr. + (25P) IAC.CIN PN + (S) SN
IEC 61406-2 draft Identification Link	
<i>Specifications based on data standards: RFC syntax + ISO/IEC 15418, part ASC Data Identifiers, ISO/IEC 15459 properties (option for IEC 61406-2)</i>	

New potential application areas:

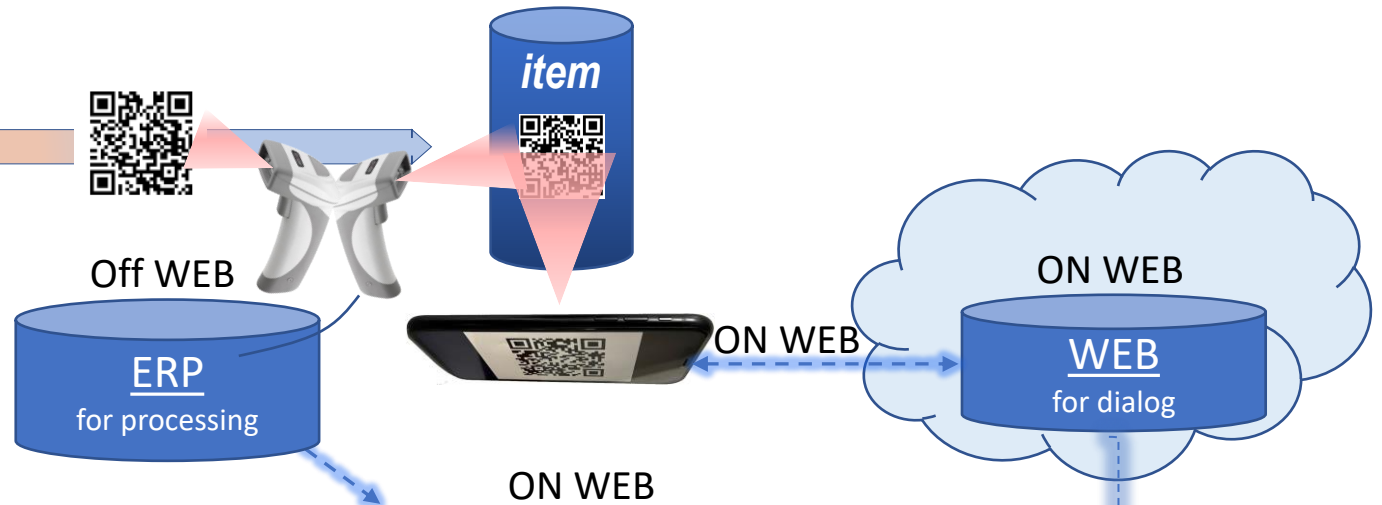
- All industries and healthcare using ASC DI structure and ISO/IEC 15459 properties

Example codes AutoID URL for WEB access & ERP parsing:

HTTPS://SRV.DE/ART?.25P=IACCINPRODX12&.S=999

			└ Part No.	└ SN
URL root with „?“ for query		IAC+CIN (ISO/IEC15459)		
	└	ASC DI 25P unique product ref.		
	└	. System ID for ASC DIs		

Code ready for parsing data elements for ERP fields →



Code ready for direct WEB access →

HTTPS://SRV.DE/ART?.25P=IACCINPRODX12&.S=999

Unique identification and WEB link

METHOD 3: "URL first" - WEB compatible + ERP parsing



HTTPS://SRV.DE/ART?.25P=IACCINPRODX12&.S=999



	ID	Data	Comment
			<ul style="list-style-type: none"> Scan no. 1
Symbology:	JQ1	QR	Symbology type QR passed by reader
Raw data:		HTTPS://SRV.DE/ART?.25P=IACCINPRODX12&.S=999	
Structure type:		MobileTagging	Mobile Tagging
URL:		HTTPS://SRV.DE/ART?.25P=IACCINPRODX12&.S=999	<div style="border: 1px solid gray; padding: 2px;"> URL HTTPS://SRV.DE/ART?.25P=IACCINPRODX12 </div>
			<ul style="list-style-type: none"> Contained AutoID URL fields
Labeler:	25P	IACCIN	Labeller ID Issuing Agency: ISO/IEC 15459
Article:		PRODX12	
Serial number:	S	999	
			<ul style="list-style-type: none"> Result of last scan
Resume:			AutoID URL Ok



Analysis Tree



elmicron

Unique identification and WEB link

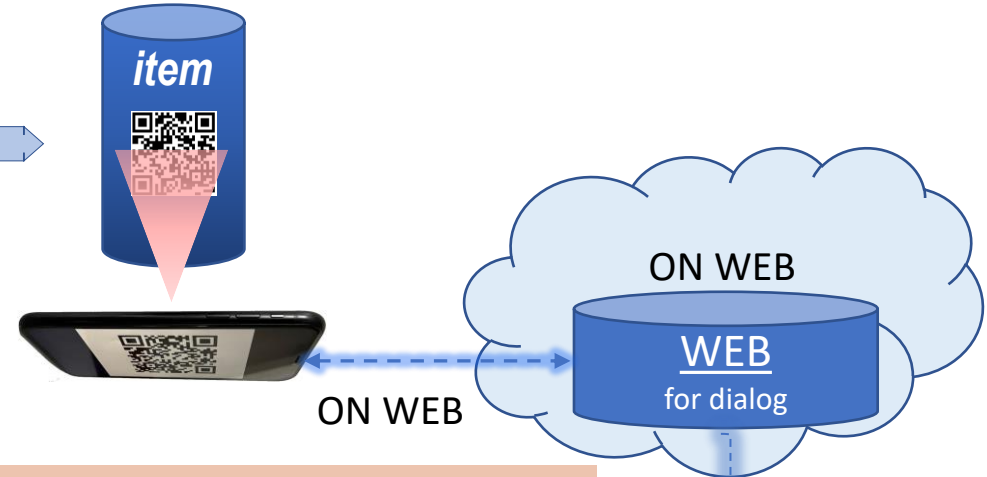
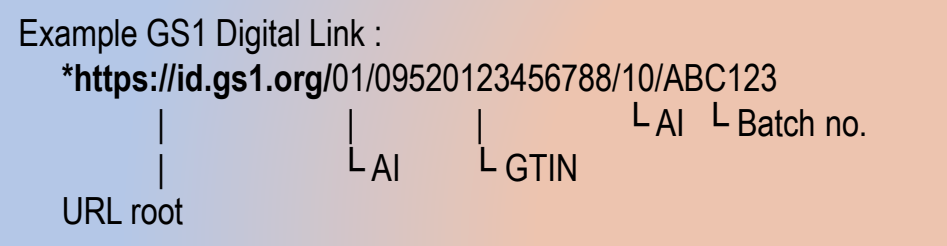
METHOD 4: "URL first" GS1 Digital Link

Unique identification method					
4 URL first GS1 Dig. link	5 URL first IEC ID link	6 Other IDs...	1 UID first, standard	2 UID first + WEB	3 URL first AutoID URL

„URL first“ WEB compatible	Example with GS1 AIs
GS1 Digital Link Standard - URI Syntax: 2022	WEB addr. + AI/GTIN/AI/Attribute/...
<i>GS1 Digital Link Standard based on data standards: RFC syntax + ISO/IEC 15418, part GS1 Application Identifiers, ISO/IEC 15459 properties for company Ids.</i>	

New potential application areas:

- All industries and healthcare using GS1 structure



Code ready for direct WEB access → <https://id.gs1.org/01/09520123456788/10/ABC123>

*Source example: GS1 Digital Link Standard: URI Syntax, chapter 5.3: GTIN+Batch → <https://ref.gs1.org/standards/digital-link/uri-syntax/>


Unique identification and WEB link











METHOD 4: "URL first" - GS1 Digital Link



Elmi-ScanLink Verify
View Device Parse Config Help

<https://id.gs1.org/01/09520123456788/10/ABC123>

	ID	Data	Comment
			▼ Scan no. 1
Symbology:]Q1	QR	Symbology type QR passed by reader
Raw data:		https://id.gs1.org/01/09520123456788/10/ABC123	
Structure type:		MobileTagging	Mobile Tagging
URL:		https://id.gs1.org/01/09520123456788/10/ABC123	 https://id.gs1.org/01/09520123456788/10/ABC123
			▼ Result of last scan
Resume:			MobileTagging structure OK







 Analysis
  Tree
  Process editor
 

Unique identification and WEB link

METHOD 5: "URL first" IEC 61406-1/02

Unique identification method					
5 URL first IEC ID link	6 Other IDs...	1 UID first, standard	2 UID first + WEB	3 URL first AutoID URL	4 URL first GS1 Dig. link

New potential application areas:

- Electronic and related industries

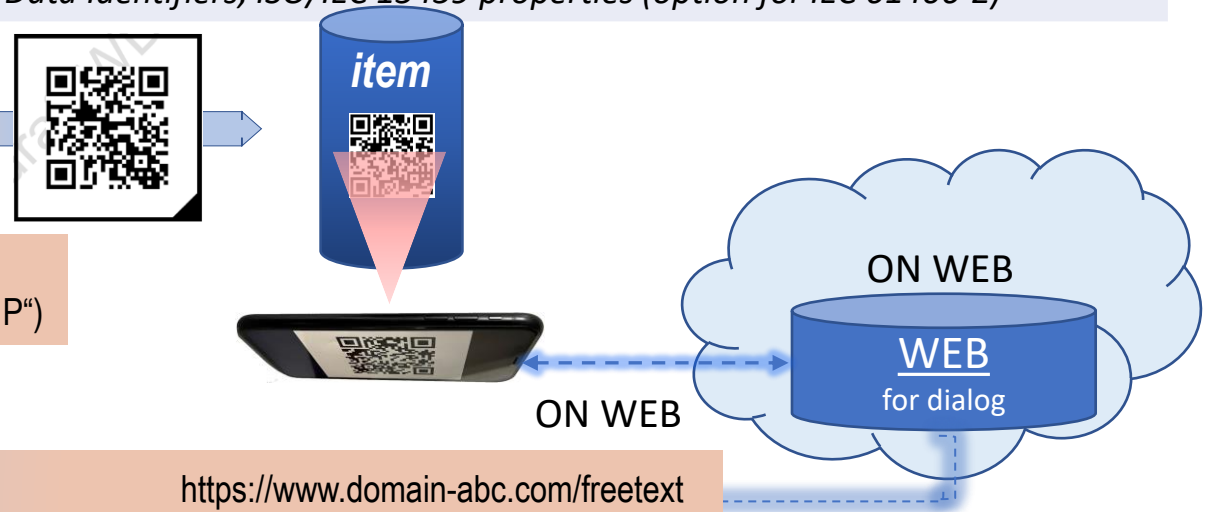
„URL first“ WEB compatible	Example with ASC DIs
IEC 61406-1 Identification Link : 2022, WEB domain as ID, no data parsing <i>Specifications based on data standards: RFC syntax</i>	WEB address
IEC draft 61406-2 – Domain ID + parsing ASC DIs <i>IEC draft 61406-2 based on data standards: RFC syntax + ISO/IEC 15418, part ASC Data Identifiers, ISO/IEC 15459 properties (option for IEC 61406-2)</i>	WEB addr. + (1PPN + (1T) Batch no.

*Example IEC 61496-1: URL as company ID and labellers construct
<https://www.domain-abc.com/freetext>
*Source: IEC 61406-1, figure 6)

Example IEC 61496-2: WEB domain as company ID and ASC DI attributes,
example see method 3 (but PN to be applied with ASC DI „1P“)

See method 3

IEC 61496-1 Code ready for direct WEB access → <https://www.domain-abc.com/freetext>



Unique identification and WEB link

METHOD 5: "URL first" IEC 61406-1/02

Example IEC 61496-1: URL as company ID and labellers construct
<https://www.domain-abc.com/freetext>



QR source:
IEC 61406-1, fig. 6



Elmi-ScanLink Verify

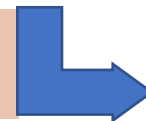
View Device Parse

<https://www.domain-abc.com/freetext>

	ID	Data	Comment
			<ul style="list-style-type: none"> Scan no. 1
Symbology:]Q1	QR	Symbology type QR passed by reader
Raw data:		https://www.domain-abc.com/freetext	
Structure type:		MobileTagging	Mobile Tagging
URL:		https://www.domain-abc.com/freetext	URL https://www.domain-abc.com/freetext
			<ul style="list-style-type: none"> Result of last scan
Resume:			MobileTagging structure OK

Analysis
 Tree
 Process editor
 elmicron

Example IEC 61496-2: WEB domain as company ID and ASC DI attributes,
 example see method 3 (but PN to be applied with ASC DI „1P“)



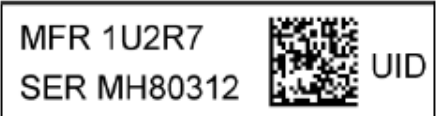
Example see method 3

Unique identification and WEB link

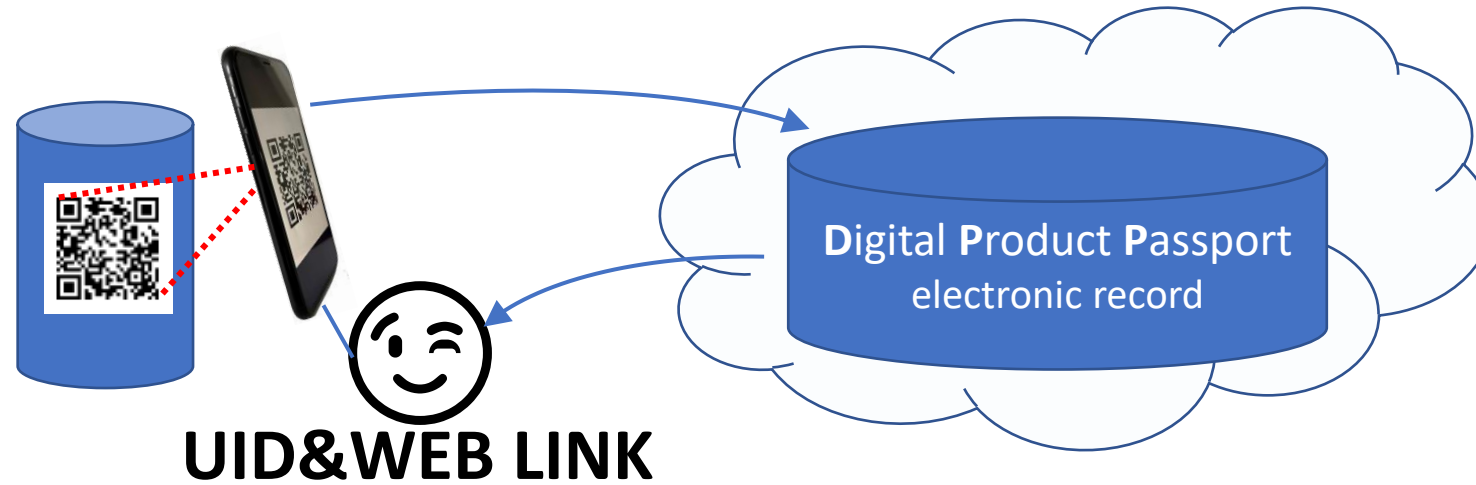
METHOD 6: “Other Identification schemes (for AIDC media)”

Unique identification method					
6 Other ID schemes	1 UID first, standard	2 UID first + WEB	3 URL first AutoID URL	4 URL first GS1 Dig. link	5 URL first IEC ID link

Application:
• Special areas

Other identification schemes	Feature	Barcode/RFID	Example
URI approach RFC 3987, flat URIs	WEB only	See IEC 61406-1	See method 5
Text Element Identifiers (TEI)	MIL STD., ISO/IEC 15434 format 12	ISO/IEC AIDC media	
UN/EDIFACT qualifier	ISO/IEC 15434 format 04	ISO/IEC AIDC media 2d/RFID	On request
JSON syntax	ISO/IEC 15434 format 15	ISO/IEC AIDC media 2d/RFID	On request
IPv6 address 128 bits (mentioned externally for check)	Network address	No solution for barcoded use found	?
Digital object identifier (mentioned externally for check)	Communication	No solution found	?
etc.			





Author: Heinrich Oehlmann
Member of Eurodata Council Institute e.V., DIN NA 043-04-31
@Elmicron Dr. Harald Oehlmann GmbH
Kösener Str. 85, 06618 Naumburg, Germany
phone: +4934457811 20
email: heinrich.oehlmann@elmicron.de