

Use of 2D barcodes on CITES permits / certificates



Bangkok, 18 July 2023

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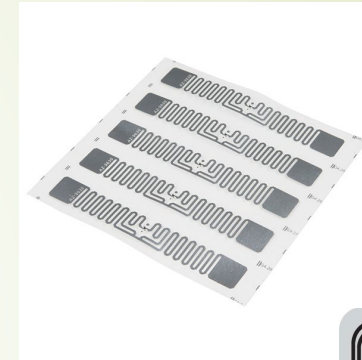
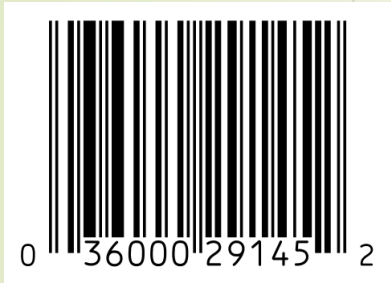


Scope and purpose of the study

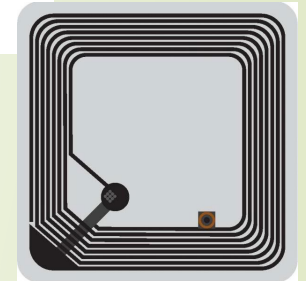
1. Conduct a study on the current practices of the Parties that are using 2D barcodes on their permits/certificates
2. Draft a guideline on the use of two-dimensional barcodes on CITES permits/certificates:
 - Technical specifications and types of recommended 2D codes
 - Content of the code
 - Workflow of the permit issuance, endorsement or validation
 - Digital signatures and data security

Automatic Identification and Data Capture (AIDC)

OCR, Barcodes and RFID

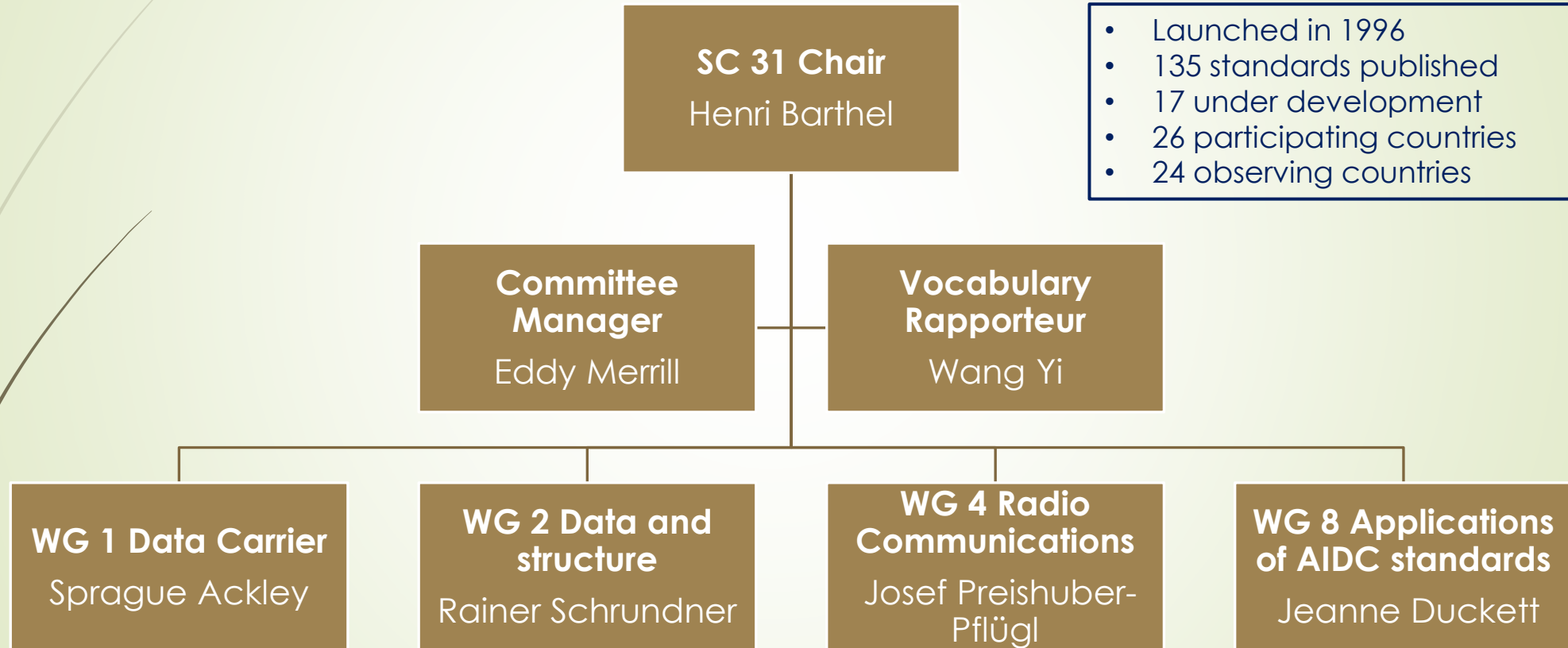


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ISO/IEC JTC 1/SC 31

Standardization of data formats, data syntax, data structures, data encoding, and technologies for the process of automatic identification and data capture






Examples of SC 31 standards

- ISO/IEC 30116 - Optical Character Recognition (OCR) quality testing
- ISO/IEC 18004 - QR Code bar code symbology specification
- ISO/IEC 16022 - Data Matrix bar code symbology specification
- ISO/IEC 15415 - Bar code symbol print quality test specification — Two-dimensional symbols
- ISO/IEC 15434 - Syntax for high-capacity ADC media
- ISO/IEC 20248 - Digital signature data structure schema
- ISO/IEC 29161 - Unique identification for the Internet of Things
- ISO/IEC 18975 - Encoding and resolving identifiers over HTTP




Findings from survey and interviews

- A questionnaire was sent to twenty Management Authorities
- Follow-up interviews are being conducted with several MAs



Country	Documents with barcode	Barcode content
South Africa	Export permit, Import permit, Re-export certificate, Introduction from the Sea certificate, Other permits/certificates	Partial permit/certificate information, Issuance, validity and endorsement of the permit/certificate and dates
UAE	Export permit, Import permit, Re-export certificate	URL link to permit / certificate portal
Bahrain	Export permit, Import permit, Re-export certificate, Ownership certificates	URL link to permit/certificate portal, Issuance and validity of the permit/certificate and dates
Singapore	Export permit, Import permit, Re-export certificate, Certificate of Origin for App III	Partial permit/certificate information. Proprietary format
Mozambique	Export permit, Import permit, Re-export certificate, non-CITES specimen	Full permit/certificate information




Country	Documents with barcode	Barcode content
Thailand	Export permit, Import permit, Re-export certificate, non-CITES specimen	Full permit/certificate information, URL link to permit/certificate portal
Belgium	Export permit, Import permit, Re-export certificate, Introduction from the Sea certificate, EU certificates	Partial permit/certificate information
Philippines	Export permit, Import permit, Re-export certificate	Partial permit/certificate information
Saudi Arabia	Export permit, Import permit, Re-export certificate, Introduction from the Sea certificate, Other permits/certificates	Partial permit/certificate information, Issuance, validity and endorsement of the permit/certificate and dates
Switzerland	Export permit, Import permit, Re-export certificate	It is for internal use and allows for non-used permits to initiate a cancelling procedure within the IT application




The European Union approach

- The EU CITES system will issue digital permits without printing them
- The system supports non-EU permits that can contain 1D or 2D barcodes
- The barcode should only contain the URL link to the permit/certificate portal in order to verify authenticity
- The system is based on a hub database that contains the permits / certificates data.
- It enables desynchronised communications between many parties, when EPIX is designed for one-to-one communications
- The system is operational for appendix 2 specimens, but not yet in use
- It will be extended to exports, re-exports, intra-EU trade and specific certificates, e.g., musical instruments



How do you see the future use of 2D barcodes on CITES permits/certificates?

- Digital integration, enhanced security, and easy access to trustworthy information
- Easy verification of the authenticity of CITES permits. Ideally it would link back to the issuing database
- Setting a standard of using a 2D barcode will decrease the time related to requesting and inspection process
- Key element to prevent fraud, easier for border validation and communication to other CITES authorities.
- To know the wildlife species and the actual quantity of species that arrived in/departed from a certain country
- Coding the contents of the permit, for the importing party to load the permit into their system, thus eliminating a media breaks and enhance the quality of data in the various systems and well for reporting



What would be required to increase the adoption of 2D barcodes on CITES permits/certificates?

- Establish Standardized Format
- Awareness Campaigns and Educational Initiatives
- Seamless Integration with Existing Systems
- Technological and technical capacity building
- Increased security of QR Codes
- The technology and budget
- Easy and accessible method for reading
- A Resolution or a Decision from the CoP




Considerations for 2D guideline

1. Phased approach
 - a) URL to permit
 - b) URL to permit with digital signature
 - c) URL to permit with digital signature and some data (dates, quantities, etc.)
2. Need to determine target users
 - a) National agencies
 - b) Customs
 - c) Other MAs
3. Web resource
 - a) Resolvers with different access for different parties
 - b) Security managed in the cloud



Open questions to stimulate discussion

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1. The 2D barcode must contain a URL link to the permit
 2. The 2D barcode must be secured with a standard electronic signature
 3. MAs must be able to add additional information for their own needs
 4. The required technical infrastructure (database, digital signature keys management, web access) will eventually be available in all MAs
 5. 2D barcodes on paper permits / certificates must become the rule
 6. A standardised approach must be adopted across all CITES MAs
 7. A CITES regulation should eventually enforce the adoption of the system

Thank you for your attention

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