Technical Working Party on Automation and Computer Programs	**TWC/36/8 Add.**
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ADDENDUM TO
WEB SERVICES PROVIDED BY UPOV

Document prepared by the Office of the Union

Disclaimer: this document does not represent UPOV policies or guidance

The Annex to this document contains a copy of a presentation on "Web services provided by UPOV", to be made at the thirty-sixth session of the Technical Working Party on Automation and Computer Programs (TWC).

[Annex follows]

ANNEX

WEB SERVICES PROVIDED BY UPOV

Presentation prepared by the Office of the Union

TWC/36/8

Web services provided by UPOV

UPOV Office

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PREVIEW

- Machine to Machine communication
- WIPO standard on Web API

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Machine to Machine communication
Reasons

- Your PVP office has already an online system
- Need to process automatically received applications
- Breeder's need to import data from their system to UPOV PRISMA.

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PRISMA Web services
Export Web service

- From UPOV PRISMA to PVP office system
- Authorization
  - PVP office admin
  - PVP officer
- Available at:
  - https://www3.wipo.int/EAFWebService/ExportWS

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Input Message

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
   <soapenv:Header>
   <soapenv:Body>
      <ws:exportPVPApplications>
         <!--Optional:-->
         <arg0>
            <!--Optional:-->
            <authority>QZ</authority>
            <!--Optional:-->
            <docType>XML</docType>          XML, PDF or both
      </arg0>
      </ws:exportPVPApplications>
   </soapenv:Body>
</soapenv:Envelope>
```

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UPOV PRISMA Web services
Import Web Service

- Called by PVP offices
- Authorization:
  - PVP office
  - PVP office Admin
- Available at:
  - https://www3.wipo.int/EAFWebService/ImportWS

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Input message

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
    <soapenv:Header/>
    <soapenv:Body>
        <ws:importPVPApplication>
            <!--Optional:-->
            <arg0>
                <!--Optional:-->
                <importZipFile>cid:CL_Glyc_test.zip</importZipFile>
                <!--Optional:-->
                <languageAnswerAF>es</languageAnswerAF>
                <!--Optional:-->
                <languageAnswerTQ>es</languageAnswerTQ>
                <!--Optional:-->
                <wipoAccount>MADHOUR</wipoAccount>
                <zipFileName>CL_Glyc_test.zip</zipFileName>
            </arg0>
        </ws:importPVPApplication>
    </soapenv:Body>
</soapenv:Envelope>
```

Binary attachement

Breeder account: Application data owner

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Some considerations

- Breeder reference should not be used twice for the same authority
  - A same variety for the same authority could not be imported twice
- An International Reference Number (IRN) is assigned to the application data if the data is sucessfully transferred.
- Application data should be valid against the office-specific schema profile
- Attachments should be declared correctly.

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Output message

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">
   <soap:Body>
      <ns2:importPVPApplicationResponse xmlns:ns2="http://ws.service.eas.upov
         <return>
            <status>
               <statusCode>0</statusCode>
               <statusMessage>Success- Data received and processed.</statusMe
            </status>
         </return>
      </ns2:importPVPApplicationResponse>
   </soap:Body>
</soap:Envelope>
```
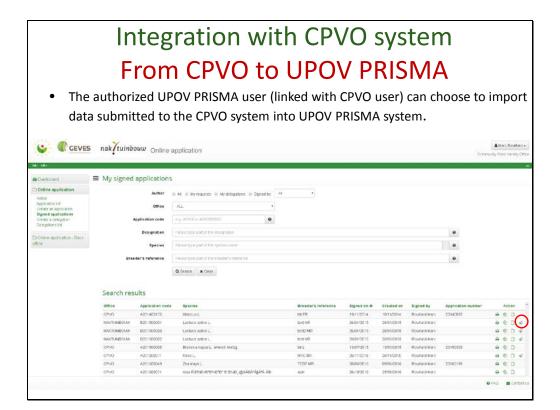
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Imported application data

- It can be copied and reused to draft applications for the same variety in other authorities.

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Integration with CPVO system
From CPVO to UPOV PRISMA

- The data will be available for copy and reuse in other applications using the UPOV PRISMA.

- An International Reference Number (IRN) is assigned to the imported data and can be used to submit other applications for the same variety.

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Integration with CPVO system
From CPVO to UPOV PRISMA

- The authorized UPOV PRISMA user (linked with CPVO user) can choose to import data submitted to the CPVO system into UPOV PRISMA system.

User Authorization

- Only users authorized by the PVP office can submit application data
  - Authorized signatory, representative, agent
- Synchronize user accounts at UPOV PRISMA level and PVP office level

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Integration with CPVO system
From UPOV PRISMA to CPVO

- The breeder needs to link their WIPO account with their CPVO account
- Only authorized clients of the CPVO system can submit application data to CPVO using UPOV PRISMA.
- The link is established at «Edit Profile» page

NOTE: It will not be possible to select CPVO as authority if the link is not established by the breeder.

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PREVIEW

- Machine to Machine communication
- WIPO standard on Web API

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Objective and Scope

- Provide a set of design rules and model service contracts for building and consuming Web Services to facilitate IP data exchange in harmonized way through M2M communications IPOs.
- Standard covers two types of web services
  - RESTful API
  - SOAP-based API
- It is intended to provide mockup Rest API following the Standard if possible.

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REST API Design Rules (1/3)

- Service Contract : API Documentation
  - RAML or OpenAPI Specifications
    - RAML: not a standard but provides XSD validation
    - OpenAPI Specification: standard but provides XSD validation
- API endpoints
- Versioning
  - As part of the URL
  - Major version only
- Naming – camelCase

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REST API Design Rules (2/3)

- Rules when to use each HTTP verb
- Data Query Patterns
  - Pagination;
  - Sorting;
  - Expand.

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REST API Design Rules (3/3)

- Content negotiation using HTTP headers Accept and Content-Type
  - Should support both XML and JSON;
  - Consistent rules for transforming XML to JSON (e.g. BadgerFish).
- Error handling guidelines (status codes, payload)

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SOAP-based API Design Rules

- Service contract : WSDL
- Recommending latest interoperability standards (WS-I Basic Profile 2.0).
- Allowing latest standards (WSDL 1.2);
- Versioning (name and namespace)
- Naming conventions provided
  - Service names
    - UpperCamelCase and 'Service' suffix
  - Operations (<Verb> <Object> <Qualifier – Optional)
  - Requests ('Request' suffix) and responses ('Response' suffix)

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[End of Annex and of document]