



EAF/3/3

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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

MEETING ON THE DEVELOPMENT OF A PROTOTYPE ELECTRONIC FORM**Third Meeting
Geneva, April 9, 2014**

REPORT

adopted by the meeting on the development of a prototype electronic form

Disclaimer: this document does not represent UPOV policies or guidance

Welcome and opening

1. The meeting on the development of a prototype electronic form ("meeting") was opened and chaired by Mr. Peter Button, Vice Secretary-General, UPOV, who welcomed the participants in Geneva and those who participated in the meeting by means of electronic conference.
2. The list of participants is reproduced in Annex I to this report.

Approval of the agenda

3. The meeting adopted the draft agenda (document EAF/3/1 Rev.), as circulated to the participants in advance of the meeting.

Experiences of participating members of the Union with electronic application systems*(a) Community Plant Variety Office of the European Union (CPVO)*

4. Mr. Jean Maison and Mr. Marc Rouillard, Community Plant Variety Office of the European Union (CPVO), made a presentation on "Experience of the CPVO with electronic application systems", a copy of which is attached as Annex II to this report.

(b) Republic of Korea

5. Mr. Seung-In YI, Examiner (Senior Researcher), Plant Variety Protection Division, Korea Seed & Variety Service (KSVS), made a presentation on "PVP electronic application system of KSVS", a copy of which is attached as Annex III to this report.

(c) United States of America

6. Mr. Paul M. Zankowski, Commissioner, Plant Variety Protection Office, United States Department of Agriculture (USDA), made a presentation on "US PVP office electronic application processing system", a copy of which is attached as Annex IV to this report.

Developments concerning the prototype electronic form

7. The meeting considered document EAF/3/2 "Developments concerning the prototype electronic form".

8. It was recalled that the key aspects of the prototype from the perspective of members of the Union are as follows (see document CAJ/68/8 "Electronic application systems"):

Form Content: The UPOV electronic form would contain all items required by the participating members of the Union, i.e. it would contain all items in the UPOV Model Application Form and, in addition, items required for an application in the participating member of the Union concerned. Applicants would select the members of the Union in which they wish to make an application and all relevant items for the selected members of the Union would be presented for completion.

Status: Participating members of the Union would decide the status of any data provided via the UPOV electronic form for their own situation.

Data format: The UPOV electronic form would enable data to be transferred to participating members of the Union in Word, Excel, PDF or XML format. The participating members of the Union would decide in which format(s) to accept data. In the case of XML format, a standard format would be developed, based on WIPO standard ST.96.

Languages: The UPOV electronic form would present all items (questions) in English, French, German and Spanish. Translations for all items (questions) in other languages would be provided by the participating members of the Union, with a suitable disclaimer.

Crops/species: Crops/species for the prototype would be:

Lettuce (*Lactuca sativa* L.);
Potato (*Solanum tuberosum* L.);
Rose (*Rosa* L.)
Apple (*Malus domestica* Borkh.).

Partners: The partners in the development of the prototype would be the participating members of the Union (including the continued participation of the Community Plant Variety Office of the European Union (CPVO)), Office of the Union, WIPO Internet Services Section (now WIPO External Web Applications Section), WIPO Standards Section, WIPO Global Database Service, ISF and CIOPORA.

9. It was reported that the participating members of the Union were: Argentina; Australia; Brazil; Canada; Colombia; Dominican Republic; European Union; Japan; Mexico; New Zealand; Paraguay; Republic of Korea; Switzerland; United States of America and Viet Nam.

(a) *Form content*

(i) *presentation of "mock-up" of prototype electronic form and project brief*

10. It was recalled that it had been agreed during the meeting on the development of a prototype electronic form, held in Geneva on October 24, 2013, that the "mock-up" would be the basis to develop a fully working prototype. The "mock-up" and prototype would be in English only and the Technical Questionnaire (TQ) would be for Lettuce (*Lactuca sativa* L.) (see document EAF/2/3 "Report", paragraph 18).

11. A second phase of the "mock-up" of the prototype electronic form was presented at the meeting by the Office of the Union and by the WIPO External Web Applications Section. It was noted that the "mock-up" contained the questions from the UPOV Model Application Form, and additional questions which were not covered by the UPOV Model Application Form's questions, as provided by the following participating members of the Union: Australia, Brazil, Canada, European Union, Japan, Mexico, New Zealand, Republic of Korea, Switzerland, United States of America and Viet Nam. The mock-up is available under: <http://upov.appls.org/upov/login.html>.

12. An illustrative application, to present how the questions might be displayed, when for instance applying for lettuce in Canada (CA), the European Union (QZ) and New Zealand (NZ) was also demonstrated: <http://upov.appls.org/upovdemo/login.html>.

(ii) *proposals concerning “core” questions*

13. It was recalled that, as a first step, all questions will be provided by the participating members of the Union in English plus the language of the member of the Union for its own questions. The participating members of the Union will also provide translations of all questions in their own language.

14. It was noted that information from the application forms received from participating members of the Union had been compiled in Annexes I and II of document EAF/3/2, which contain a summary of the questions in the UPOV Model Application Form and additional questions (Annex I) and the questions from the TQ of the UPOV Test Guidelines for Lettuce (*Lactuca sativa* L.) (TG/13/10 Rev.) (Annex II).

15. It was noted that Annex III to document EAF/3/2 provided a proposal for the “core” questions to be included in the prototype electronic form, on the basis that more than 50% of participating members included the questions.

16. It was agreed that the proposal for the “core” questions to be included in the prototype electronic form would be discussed at a subsequent meeting.

(iii) *timetable for the launch of the prototype electronic form*

17. It was agreed that the timetable for the launch of the prototype electronic form should be considered in relation to the other items to be discussed (see future actions)

(iv) *arrangements for updating the form by participating members of the Union*

18. It was agreed that the arrangements for updating the form by participating members of the Union would be discussed at a subsequent meeting, once the first phase of the prototype electronic form had been developed.

(b) *Status*

(i) *user authentication*

19. The possible options for level of authentication required to enter information (e.g. user name and password, digital certificate, electronic signature, etc.) were presented at the meeting by the WIPO External Web Applications Section, giving the example of an existing WIPO Accounts (e.g. WIPO Identity Management (IDM) system for authentication of users). It was agreed to follow the same approach for the development of the first phase of the prototype electronic form.

(ii) *payment systems*

20. A demonstration of payment method for fees (e.g. electronic payment) was made at the meeting by the WIPO External Web Applications Section. It was agreed that it would be necessary to provide the possibility for applicants to pay in different currencies (e.g. CHF, US\$, €) and to include a fee calculator.

21. It was agreed that this aspect would not be included in the phase 1 of the prototype but would be included in the final version.

(c) *Data format*

(i) *WIPO Standards ST.96 and ST.67*

22. Mr. Yun Young-Woo, Senior Industrial Property Information Officer, Standards Section of WIPO, reported that there had been no new developments in relation to WIPO Standard ST.96 and ST.67 since the last meeting held on October 24, 2013 (see document EAF/2/3 “Report”, paragraph 16). It was noted that the next XML4IP Task Force meeting would take place in London, United Kingdom, from November 10 to 14, 2014.

(ii) *standardization for data not covered by ST.96 and ST.67*

23. Mr. Marc Rouillard, CPVO, made a presentation on "Standardization for data not covered by ST.96", a copy of which is attached as Annex V to this report.

24. It was agreed that an important first step in the development of a prototype electronic application system would be to understand the data structure used by authorities (i.e. PVP offices) and applicants (i.e. breeders). Therefore, it was agreed to ask participants to provide information on their databases as follows:

- application forms
- database model (structure)
- any documentation on the database model (e.g. data dictionary)
- naming conventions
- design rules (design pattern)
- description of the standard format for sending or receiving data and a sample data file (XML, csv, etc.)
- a list of fields and business rules for populating data
- specific constraints:
 - mandatory fields
 - optional fields
 - default values for fields
 - integrity constraints
- any additional documentation and other information available at hand (e.g. PowerPoint presentations of the system) and/or
- XML schema of your data model (XSD file).

25. It was agreed that only participants who provided the necessary level of information, as indicated above, could be assured that the format would be compatible with their databases. Participants would also need to allocate time and resources (including the person with relevant IT knowledge of the database) for the following:

- to clarify their data requirements, and
- test the import / export facility of PVP data to / from their internal system to the UPOV database Form.

(d) *Technical aspects*

- (i) *technical and business support for applicants*
- (ii) *routine maintenance provisions*
- (iii) *compliance with Web Content Accessibility Guidelines (WCAG)*

26. It was agreed that technical aspects above would be discussed at a subsequent meeting.

(e) *Legal aspects and disclaimer*

27. It was noted, in relation to legal aspects that the prototype electronic form would need to respect national or regional legislation (e.g. disclaimer, communication, correspondence route). It was agreed that legal aspects and disclaimer would be discussed at a subsequent meeting.

Future actions and program

28. The following timetable was agreed for the development of the prototype:

Participating members to send their database structure, XML format or interface tables (requirement for participation in the project) Circular to be sent, requesting input from participants (PVP Offices + Breeders)	by June 15, 2014
Analysis of databases of participating members, design of the database structure and data interface tables	by September 2014

Consolidation of questions (bi/multilateral communication)	by September 2014
Finalization of project brief and request for cost estimate from approved supplier	June 2014
Agreement on the database structure/ import-export option/ interface tables format	October 2014
Start of the project	October 2014
Presentation of the prototype to the CAJ and Council	October 2015

29. The following features were agreed for inclusion in the version 1 of the prototype:

- all the features presented in the mock-up,
- an administration interface with a dashboard to edit, submit or delete information,
- a possibility to import and export XML information.

30. The following aspects were agreed not to be included in the version 1 of the prototype but in the final version:

- payment authorization,
- different languages,
- possibility for participating UPOV members to introduce or modify their questions in the form,
- technical aspects such as: business support for applicants; routine maintenance provisions; compliance with WCAG; legal aspect and disclaimer.

31. It was agreed to consider the following items at the subsequent meeting:

(a) Phase 1:

- (i) Presentation of "mock-up" of prototype electronic form and proposals concerning "core" questions (presentation by the Office of the Union and the External Web Applications Section of WIPO)
- (ii) Analysis of information provided by participating members, design of the database structure and PVP data format (presentations by the Office of the Union and the External Web Applications Section of WIPO)
- (iii) WIPO Standards ST.96 and ST.67 and standardization for data not covered by ST.96 and ST.67 (presentations by the Office of the Union and the Standards Section of WIPO)
- (iv) Presentation of administration interface and user authentication (presentation by the External Web Applications Section of WIPO)
- (v) Presentation of project brief and time table (presentation by the Office of the Union).

(b) Phase 2:

- (i) Payment authorization (presentation by the Office of the Union and the External Web Applications Section of WIPO)
- (ii) Different languages (presentation by the Office of the Union)
- (iii) Possibility for participating UPOV members to introduce or modify their questions in the form (presentation by the Office of the Union and the External Web Applications Section of WIPO)
- (iv) Technical aspects such as: business support for applicants; routine maintenance provisions; compliance with Web Content Accessibility Guidelines (WCAG); legal aspects and disclaimer (presentation by the Office of the Union).

Date of next meeting

32. It was agreed that the next meeting would be held in Geneva on October 14, 2014, at 18.00, with the possibility of participation by means of electronic conference.

33. *This report was adopted by correspondence.*

[Annexes follow]

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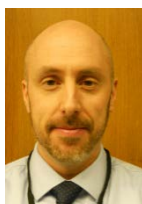
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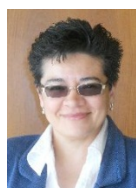


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Jun KOIDE, Technical/Regional Officer (Asia)



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Ariane BESSE (Ms.), Administrative Assistant

[Annex II follows]



CPVO
Community Plant Variety Office

Experience of the CPVO with electronic application systems

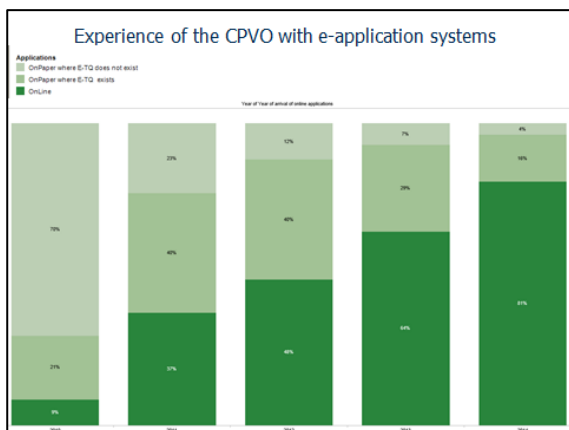
Meeting on the development of a prototype electronic form
Third Meeting
Geneva, April 9, 2014
Marc Rouillard, Jean Maisson

1

Experience of the CPVO with e-application systems

- System operational since March 2010
- Principles:
 - ✓ Questions stored in a database
 - ✓ Breeder chooses the species names of the variety he wants to apply for
 - ✓ forms generated with the appropriate set of questions
- All existing paper TQs covered since March 2014 (More than 200)
- System available in English, French, Dutch and German

2



Experience of the CPVO with e-application systems

- Promotion of the system:
 - ✓ In the beginning: Trainings organized in the most important countries in terms of number of applications
 - ✓ Now: Targeted to clients not using the system
 - ✓ A few clients do not want to use the system:
 - Signature issue
 - Link to their internal systems

4

Experience of the CPVO with e-application systems

- Future developments:
 - ✓ No more maintenance of paper forms, will be generated from the database of questions, consequences in terms of layout
 - ✓ Development of a e-TQ database, including TQ's linked to protocols from
 - CPVO
 - UPOV
 - National

5

Experience of the CPVO with e-application systems

- Future developments:
 - ✓ Further automatic checks to prevent omissions or inconsistent replies from applicants
 - ✓ Database of replies to non confidential TQ questions. Possible dissemination to entrusted examination offices
 - ✓ Client database available on the web, breeders can define who is authorized to sign before the Office

6



CPVO
Community Plant Variety Office

Sharing the system with EU National authorities

7

Experience of the CPVO with e-application systems


- Pilot project
- Two participating National Offices: GEVES (France) and Naktuinbouw (Netherlands)
- Applications for PVR or NLI made via a centralised web site

www.plantvarieties.eu

8


Experience of the CPVO with e-application systems

- Principles:
 - ✓ Questions stored in a database
 - ✓ Breeder chooses the species names of the variety he want to apply for, the procedure and country
 - ✓ forms generated with the appropriate set of questions
 - ✓ In case the same variety has already been applied in another procedure with the system, answers to the questions taken over




Experience of the CPVO with e-application systems

- Situation
 - ✓ A range of additional developments necessary:
 - Creation of specific website (www.plantvarieties.eu)
 - rewriting the backoffice (heavy client) to a web version (lighter) in order to allow easier remote access
 - Adding flexibility to the system, enabling National authorities to insert questions and help features at various places in forms, customization of logo, headers and footers ...
 - specific developments for hybrids of agricultural species (i.e. sub-Technical Questionnaires)
 - More possibility to display questions or sections triggered by an answer
 - Procedure to export data to National databases
 - ...



Experience of the CPVO with e-application systems

- Situation
 - ✓ 3 pilot species defined, Lettuce, Tomato and Maize
 - ✓ Testing with a panel of clients in the end of 2013, main feedback
 - Misunderstanding of the system: no possibility to file an application for a variety in several procedures at the same time
 - Further customization of application forms
 - Some bugs
 - Questions linked to National procedures, possible harmonization



Experience of the CPVO with e-application systems

- Interim conclusion with the project partners in February 2014
 - ✓ The CPVO will undertake a well defined list of IT developments until the end of the summer
 - ✓ Objective to go live with the system in September 2014
 - ✓ Proposal for an agreement to GEVES and Nakt in the frame of the pilot project, support issues
 - ✓ 6 months experience before proposing new EU authorities to join the system



CPVO
Community Plant Variety Office

Thank you for your attention

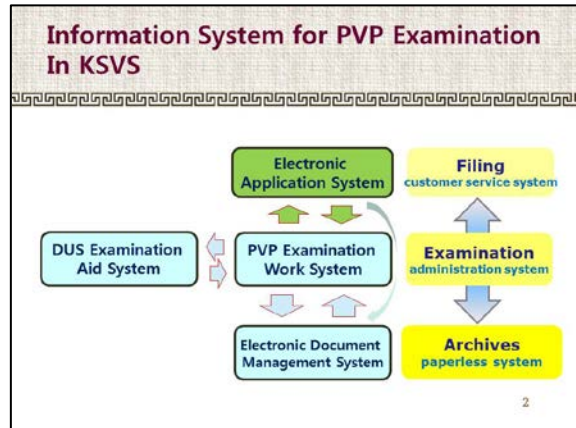


[Annex III follows]

PVP Electronic Application System of KSVS

YI Seung-in

Korea Seed & Variety Service
Republic of Korea



System Structure & Program Language

- **Electronic Application System**
 - Web-based online system: Java, Jsp, spring(ibatis) framework
 - opens at 2005
- **PVP Examination Work System**
 - Java, mi-platform, CAF framework
 - open: 2008, 2010;
- **DUS Examination Aid System**
 - OZ platform, Jsp
 - 2008; experimental planning, data logging & processing, reporting
- **Electronic Document Management System(EDMS)**
 - Java, Jsp, e-Government framework, PDF
 - 2013, storage and search

Electronic Application System - cover page -

Electronic Application System

● Applicant can access through Internet (<http://www.seednet.go.kr>)

Yearly Filing of Application

Year	Online	Total	% Online
2009	434	547	79%
2010	479	574	83%
2011	484	587	82%
2012	544	606	90%
2013	492	599	82%

Electronic Application System - Front page -

Fill-in & up-load system !!!

Electronic Application System

- Membership: Application & Permission
- Log-in: ID/PW or Digital Certificate
- Filling-in the application form: basic and personal information
- Up-loading attachment files: details and some additional documents
- Payment
- Submission

Application Received
➤ transferred to & listed on "PVP Examination Work System"

Fill-in Application Form(Data Input)

● Input of application metadata

① Applicant Section

- name, address, telephone, share(% in case of joint application)
- Date of Birth / Business registration No. / Nationality
- repeated as No. of persons

Fill-in Application Form(Data Input)

- ② Agent Section (in case)
 - name, address, telephone
- ③ Breeder Section
 - name, address, telephone

Fill-in Application Form(Data Input)

- ④ Plant Section
 - common name, botanical name, Crop type
- ⑤ Denomination / Seed Sample Section
 - variety denomination: Korean & English
 - seed sample: direct submission(seed-propagated plants), letter to submission(vegetatively-propagated plants)

Fill-in Application Form(Data Input)

- ⑥ Description of variety
 - technical questionnaire: essential characteristics, description about distinctness, uniformity & stability, GMO-related information and statement, growing season and some additional information(disease resistances, growing conditions.....)
 - characteristics table

File Up-load

- Attachment of documents
 - ※ Required
 - ① photographs: applied & similar variety
 - ② breeding history
 - ※ Optional
 - ③ documents to verify share of the rights
 - ④ document to confirm the power to represent
 - ⑥ others: supplementary data or additional characteristics...

Electronic Payment

- Applicant completes the on-line application by payment and submission

3-options for payment

- ① credit card
- ② real-time account transfer
- ③ attachment of receipt for payment (bank slip)

Storage and Search: EDMS

- Application form is converted into PDF file in EDMS

※ Procedure

- ① PDF file conversion
 - whole application files are integrated into a single application form in PDF format
 - transferred to EDMS for storage, search & reference
- ② insertion of digital signature
 - digital signature is inserted into the PDF file

Storage and Search: Digital Signature

- Digital Signature: Use of Digital Certificate based on PKI (Public Key Infrastructure)

- Digital Certificate is issued by nationally designated authorities: GPKI or NPKI

Role of digital signature

- ① Identification of applicant or presenter
- ② Certification of originality of application and authenticity of the document thereafter

EDMS; Electronic pouch

- Electronic Document Management System with separated sever

- ① Converting all Examination-producing document to PDF format
 - Application form(including attached files), Examination Report, DUS trial Report, Register of PVP and so on...
- ② Store documents permanently with legal status
- ③ Searching an application by Denomination, Application Number ...

Summary & Discussion

- **KSVS system features**
 - ① user friendly: simple and intuitive
 - ② flexible: minimum metadata, details can be attached
 - ③ multi-lingual format is not feasible
- **Suggestion for considerations**
 - ① authentication for application information in international level
 - ② information storage and dissemination method without damaging originality

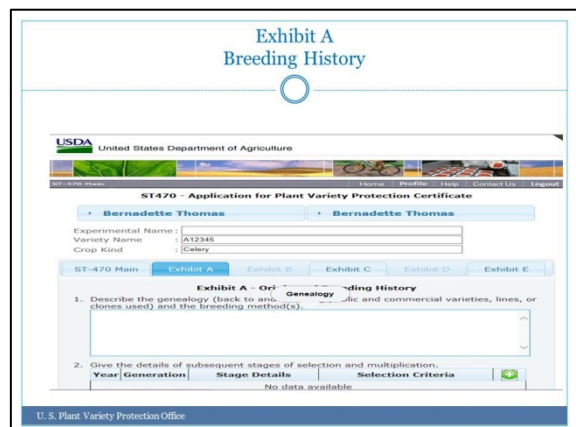
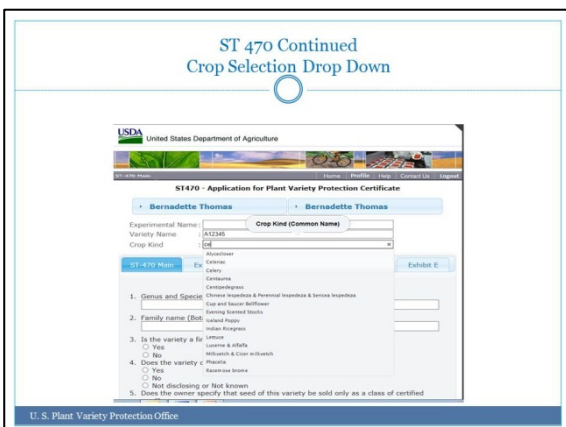
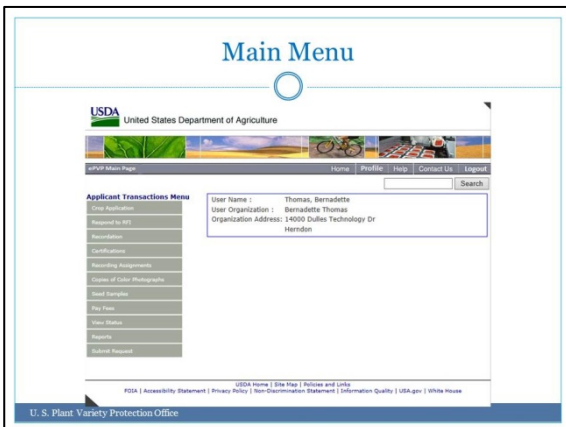
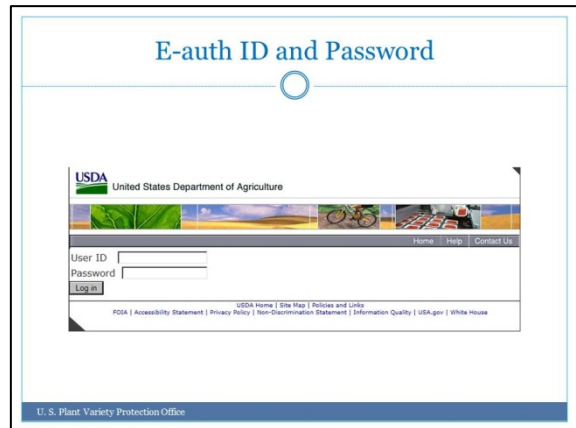
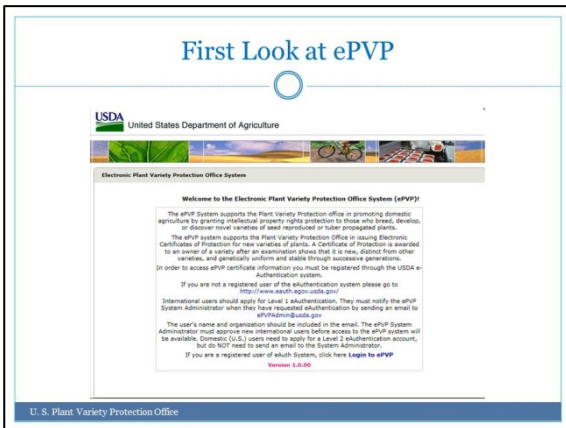
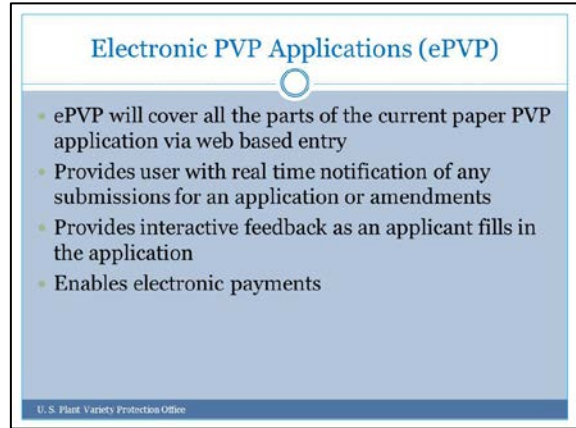
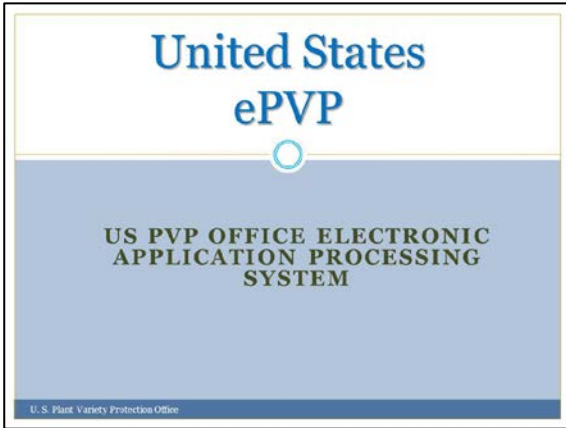
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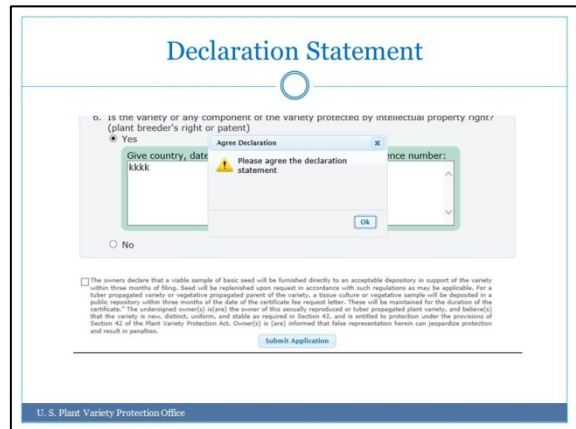
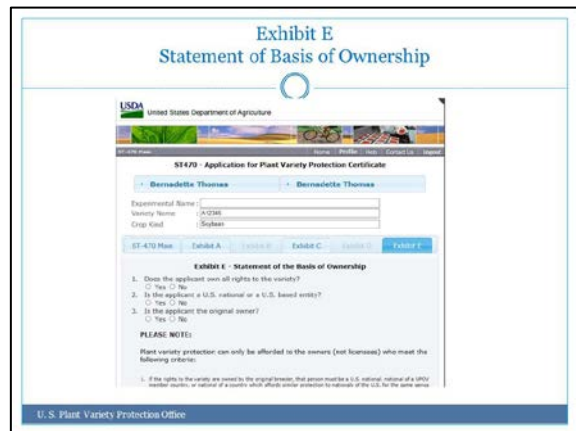
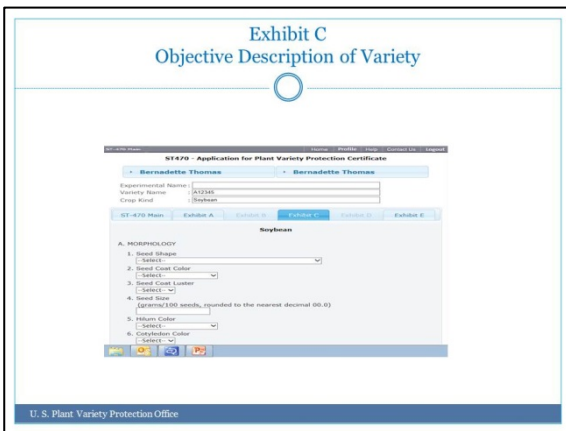
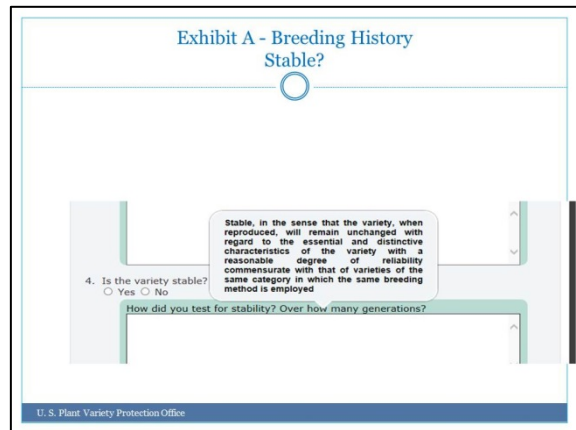
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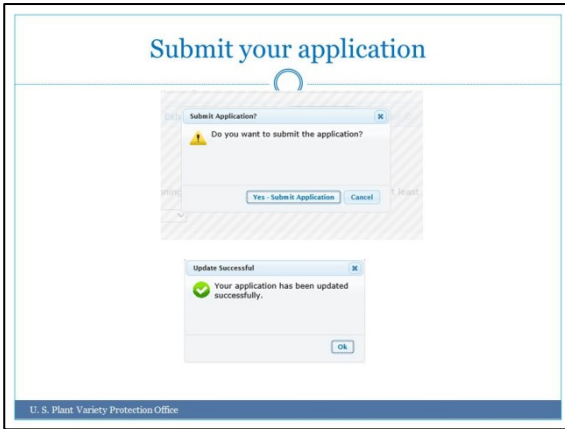
Thank you
for your attention

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[Annex IV follows]







ePVP Agile Development Project

- **Key notes about the project**
 - Used the Agile Development approach to incrementally and iteratively develop the ePVP system
 - Solutions for the system included ASP.Net (used on the customer entry point = portal) and Customer Relationship Management software (CRM) for the system's backend
 - Eleven parallel sprints (incremental projects) were run to develop the CRM and portal components of the system
 - Used an integrated team that included 6 vendor and 4 USDA staff members
 - The team was geographically dispersed and it was necessary to use Microsoft Team Foundation Server (TFS) as the Agile tool

ePVP Agile Implementation

Key project successes:


- Being able to obtain working increments of the system each sprint that users could "touch and feel".
- Users didn't have to wait for months (as they would using the traditional development approach) to confirm that their business needs were being met.
- Users reviewed working increments of the system every 22 days
- User stories (requirements) were prioritized and reviewed before each sprint, allowing the team to focus on delivering a system with the highest business value to the users.
- Focused on delivering the **core and critical parts of the system first**

ePVP Agile Implementation

Lessons Learned:

1. Have an active representative from the PVP Office involved on the project to help the team understand the business priorities
2. If new teams are used avoid using a virtual team approach (at least for the first 3 sprints) until the team gets used to working together
3. Clearly define the measurement(s) of success for each sprint and each release so that the team has a **common understanding** and a common definition of "done"
4. Time box meetings using a meeting agenda and a facilitator to help keep discussions focused. Time must be managed very wisely since Agile sprints are short with an average duration of 3 weeks
5. If using a vendor ensure the vendor has a team with working Agile experience (beyond the certifications). If possible try to obtain a vendor with an existing team with successful past performance on Agile development contracts

[Annex V follows]



CPVO
Community Plant Variety Office

4G(9) **Standardization for data not covered by ST.96**

Meeting on the development of a prototype electronic form


Third Meeting – Geneva, April 9, 2014

M.Rouillard - CPVO

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Foreword

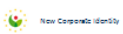
- Other experiences in XML (Purchase orders invoices using UBL)
- Focus on core business (PBR)
- Collaboration with OHIM
 - Build up on TM-XML experience
- Modular approach



2

State of play


- Digesting ST-96 and TM-XML
- Early works: identifying information specific to PBR
- Towards a PV-XML



3

Milestones

- Representation of PV data:
 - Application Form
 - Technical Questionnaires (=> variety description)
- Business-specific CPVO processes:
 - Examination reports
 - requests for Report Takeover
 - Request for Technical Examination
 - ...

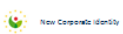


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Questions ?

Thank You

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[End of Annex V and of document]