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UPOV

CAJ/32/2 - TC/29/2
ORIGINAL : English
DATE : March 2, 1993

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

ADMINISTRATIVE AND LEGAL COMMITTEE

Thirty-second Session

Geneva, April 21 and 22, 1993

TECHNICAL COMMITTEE

Twenty-ninth Session

Geneva, April 21, 1993

UPOV CENTRAL COMPUTERIZED DATA BASE

Document prepared by the Office of the Union

1. Over recent years, several Technical Working Parties have discussed at their sessions the need for access to machine-readable information on varieties held by the Offices of UPOV member States. As direct access to data bases of other member States was considered to carry too many risks, discussions focussed on the possibility of a UPOV Central Computerized Data Base, to which the individual national offices would supply information and which would be accessible to all.

2. By means of document CAJ/29/4, the Administrative and Legal Committee and the Technical Committee were informed of the activities of the World Intellectual Property Organization (WIPO) in the field of computerized data bases and the dissemination of information via CD-ROMs (Compact Disc-Read Only Memory), the knowledge acquired and the software developed. At that time, special mention was made of the WIPO ROMARIN project which offers monthly updates on CD-ROM of the International Marks Register, including all internationally registered trademarks. The above Committees noted that if UPOV were to consider a similar project, it would have the possibility of benefitting from the development work done by WIPO in relation to the ROMARIN and other projects (e.g. UPOV would not have to bear some of the initial non-recurring investment costs of WIPO). During the studies made by WIPO, it appeared that the distribution of periodical CD-ROMs containing an updated data base, would be considerably cheaper than direct on-line access to the data base. While WIPO offers twelve updates per year for its ROMARIN project, UPOV could, for example, start with two updates per year.

3. At its session on October 24 and 25, 1991, the Council asked the Office of the Union to undertake a feasibility study for the establishment of a UPOV Central Computerized Data Base (see document C/25/12).

4. As a first step, the Office of UPOV established a questionnaire with a view to determining which information should be included in such a data base and in what form, as well as the modalities for the collection and subsequent diffusion of the data. Document TWC/10/2 contains a compilation of the replies to that questionnaire and confirms the feasibility and potential usefulness of a central computerized data base.

5. During their sessions held in 1992, the Technical Working Parties had lengthy discussions on the usefulness of such a data base, on its possibilities and what should be stored in it. They finally prepared a minimum list of information needed for the checking of variety denominations and agreed to start with that reduced list which, however, could, at a later stage, be extended to also include technical information. Although the date of grant of protection and/or inclusion in the national list is not necessary for variety denomination purposes, it should also be contained in that minimum list since these two items would enhance the usefulness of the data base considerably. The minimum list of information is reproduced in Annex I to the present document.

6. Some experts expressed reservations concerning the costs, setting up and running of such a data base. The majority, however, emphasized the need for an efficient system for all member States. With the EEC also foreseeing the need for a data base for the future EEC Plant Variety Protection Office, too much parallel work between UPOV and the EEC should be avoided. It was therefore proposed that a small subgroup be set up comprising experts from the different Technical Working Parties, as well as an expert with administrative and legal knowledge and an expert from the European Economic Community, to develop a proposal limited to the checking of variety denominations and another proposal including additional items which might usefully be included in a future UPOV data base.

7. The Office of UPOV followed up the proposal of the Technical Working Parties and invited several experts to an informal meeting with the Office of UPOV and the WIPO expert responsible for the development of the WIPO ROMARIN project. In connection with that meeting, a further questionnaire was circulated which appears, together with the answers received, in Annex II to the present document.

8. As a result of that subgroup meeting, the experts suggested that the following be considered:

(i) the elaboration of a prototype CD-ROM containing the information mentioned in Annex III to the present document,

(ii) that the Office of UPOV invite approximately ten member States to supply it, in the standardized form listed in Annex III, with the information of 250 entries in machine-readable form, to enable the company which developed the CD-ROM for WIPO to establish a prototype which could then be checked by the member States for its usefulness. On the basis of the standardized form in Annex III, the expert from WIPO prepared Record Descriptions for UPOV (reproduced in Annex IV to the present document) in order to align it as much as possible with the record descriptions used for the ROMARIN project, thus reducing the necessary changes in the computer programs to a minimum.

9. The Technical Committee, having noted the above suggestions at its twenty-eighth session, recommended that the necessary funds be made available outside the current budget from UPOV's reserve fund to prepare the afore-mentioned prototype.

10. The Office of the Union endorsed the recommendations of the Technical Committee. An oral introduction of the preliminary cost estimate was made by the WIPO expert at the forty-fifth Session of the Consultative Committee in October 1992 and is reproduced in Annex V to the present document.

11. Although the WIPO expert study indicated a figure of approximately 70,000 Swiss francs in terms of development cost of the UPOV CD-ROM, the Office of the Union emphasized

(i) that the effective implementation of the project was dependent upon the timely and regular submission of national data in a standardized form and

(ii) that a prudent estimate of likely costs should recognize the possibility of some cost increase which could result in total development cost for the project up to 100,000 Swiss francs.

12. The Consultative Committee, having discussed the above proposals and recommendations during its forty-fifth session, finally decided that

(i) the Office of the Union should prepare a detailed document on the proposed coverage, the medium of data transfer, the expected costs for the Office of the Union and the national offices, the timetable and the benefits of a centralized information system of variety denominations;

(ii) in preparing the study, the Office of the Union should consult with offices already having relevant computerized systems and should draw upon the experience of WIPO;

(iii) the study should be submitted to the April 1993 sessions of the UPOV Committees concerned.

13. The Office of the Union is currently conducting a review with member States of the benefits of a centralized information system on variety denominations, the results of which will be summarized in an addendum to this document. The Office is also considering the extent to which there may be a demand for copies of the UPOV CD-ROM from parties other than the Offices of the UPOV member States and will include an estimate in the summary of benefits.

14. A document covering the matters requested by the Consultative Committee (apart from the analysis of benefits) is attached as Annex VI.

15. The Technical Committee and the Administrative and Legal Committee are invited to consider the information contained in the present document and make the necessary recommendations to the Consultative Committee.

[Six annexes follow]

ANNEX I

LIST OF MINIMUM INFORMATION TO BE INCLUDED IN THE UPOV CENTRAL COMPUTERIZED DATA BASE

(Proposal of the Technical Working Parties)

- Latin Name
- Application Number
- Registration Number
- Country of Application for PBR
- Country of Application for National Listing
- Place of Publication (non protected, non listed varieties)
- Applicant
- Breeder
- Maintainer
- Breeder's Reference
- Approved Variety Denomination
- Proposed Variety Denomination
- Date of Application for PBR
- Date of Application for National Listing
- Date of Proposed Denomination
- Date of Approval of Denomination
- Date of Rejection of Denomination
- Date of Grant of Protection
- Date of Inclusion in National List
- Source of Information
- Remarks

[Annex II follows]

ANNEX II

QUESTIONS CONNECTED WITH THE BUILDING UP OF A UPOV CENTRAL COMPUTERIZED DATA BASE

(issued in July 1992 and answered by experts from DE, FR, NL, GB, IL)

1. Is the information on variety denominations in your office available in machine-readable form? Yes [ ] No [ ]
(If yes, provide the record layout and/or a sample of your data on diskette)

Answer: All except GB answered YES

2. Would your office be willing to transfer to a possible UPOV Data Base the information available in your Data Base on the items of the above minimum list? Yes [ ] No [ ]

Answer: All answered YES

3. Would your office be prepared to transform the information to be transferred beforehand into a standardized format? Yes [ ] No [ ]

Answer: All except GB answered YES
For GB the answer would depend on the size of the task

4. Could your office supply to a future UPOV Data Base updating information in machine-readable form

(a) in a standardized format? Yes [ ] No [ ]

(b) in a not standardized format? Yes [ ] No [ ]

Answer: All except GB answered YES for (a)
For GB the answer would depend on the system chosen

5. How many records does your data base on variety denominations cover?

(a) Number of denominations of protected varieties .....

Answer: Between 950 (IL) and 10,000 (NL)

(b) Number of denominations of unprotected varieties .....

Answer: Between 3,000 (IL) and 55,000 (FR)

6. What is the average record length for one variety denomination? .....

Answer: Between 10 (GB) and 200 (DE)

7. For which of the items in the attached minimum list does your data base foresee multiple occurences? .....

Note: Question was misunderstood

8. Which of the items of the said list should be made searchable? .....

Answer: All (DE, GB, IL)
Selected (NL)

9. Which further items should be included in the minimum information? .....

Answer: UPOV Class (DE)
Holder of rights (GB)

[Annex III follows]

ANNEX III

LIST OF INITIAL INFORMATION TO BE INCLUDED
IN THE UPOV CENTRAL COMPUTERIZED DATA BASE

(Proposal of the Technical Working Parties as amended by the informal Subgroup)

Latin Name

ID Number (Application/Registration No.)

Country (Source of Information)

Breeder's Reference

Capacity of Person	Name	Address
- Applicant		
- Breeder		
- Holder of Right		
- Maintainer		
- (Other)		

Designation	Status	Date
	Proposal*	
	Approval*	
	Rejection*	

Type	(Administrative) Event	Date
- PBR	Application*	
- NL	Protective Direction	
- Other	Prior Commercialization	
	- within State	
	- outside State	
	Priority Date	
	Objection*	
	Decision (Grant/Refusal)*	
	Termination or Withdrawal*	

Remarks

* Plus publication where and as long as relevant

[Annex IV follows]

ANNEX IV

UPOV RECORD DESCRIPTIONS

(Proposal prepared by the WIPO expert on the basis of Annex III and further suggestions by the Office of UPOV)

TYPE	TITLE	OCC	DESCRIPTION	FORMAT	REMARKS
00	*Header	1	ID Number	A8	
			Country Code	A2	
			Sequence Number	N5	
			Origin	N	U, P (See Note 1)
			Subrecord Type	N2	'00'
			Date	N8	Is date of submission of data by country
10	*Latin Name	1	ID Number	A8	
			Subrecord Type	N2	'10'
			Name	A60	
			Synonym	A60	
			Subgroup	A60	
			UPOV Class Identification	N2	(01-27)
			Common Name + Translation	A60	Translation: in one of UPOV official languages
15	*Breeder's Reference	1	ID Number	A8	
			Subrecord Type	N2	'15'
			Breeder's Reference	A15	
20	*Application Data (PVP/Patent)	1	ID Number	A8	
			Subrecord Type	N2	'20' (See Note 4)
			Application Country	A2	
			Application Number	A12	(See Note 2)
			Status + Date (A10)		
			- Status	A2	(See Note 3)
			- Date	N8	
25	*Denomination	3	ID Number	A8	
			Subrecord Type	N2	'25'
			Denomination Sequence Number	N	'1' to '3'
			Name	A60	
			Status + Date (A10)		
			- Status	A2	(See Note 4)
			- Date	N8	
30	*Applicant's Name	3	ID Number	A8	
			Subrecord Type	N2	'30' (See Note 4)
			Applicant Sequence Number	N	'1' to '3'
			Name	A50	
			Nationality	A2	WIPO ST3
			Address: Street	A50	
			Town/Country	A50	
35	*Breeder's Name	5	ID Number	A8	
			Subrecord Type	N2	'35'
			Breeder Sequence Number	N	'1' to '5'
			Name	A50	
			Address: Street	A50	
			Town/Country	A50	

UPOV RECORD DESCRIPTIONS

TYPE	TITLE	OCC	DESCRIPTION	FORMAT	REMARKS
40	*Priority Data	1	ID Number	A8	
			Subrecord Type	N2	'40'
			Priority Country/Date	A10	CCYYYYMMDD
			Priority Number	A12	(See application number in Subrecord '20')
45	*Protection/Grant Data (PVP/Patent)	1	ID Number	A8	
			Subrecord Type	N2	'45'
			Number		
			Status + Date (A10)		
			- Status	A2	(See Note 5)
			- Date	N8	
50	*Title Holder's Data	5	ID Number	A8	
			Subrecord Type	N2	'50'
			Title Holder Sequence Number	N	'1' to '5'
			Name	A50	
			Address: Street	A50	
			Town/Country	A50	
55	Maintainer's Data	5	ID Number	A8	
			Subrecord Number	N2	'55'
			Maintainer Sequence Number	N	'1' to '5'
			Name	A50	
			Address: Street	A50	
			Town/Country	A50	
60	*National Listing Data	1	ID Number	A8	
			Subrecord Type	N2	'60'
			Listing Country	A2	
			Listing Number	A12	
			Status + Date (A10)		
			- Status	A2	(See Note 6)
			- Date	N8	
65	Data of Other Relevant Party	5	ID Number	A8	
			Subrecord Type	N2	'65'
			Party Sequence Number	N	'1' to '5'
			Name	A50	
			Address: Street	A50	
			Town/Country	A50	
70	*Reference(s) to applications/ registrations and/ or denominations in other countries for same variety	9	ID Number	A8	
			Subrecord Type	N2	'70'
			Reference Sequence No.	N	'1' to '9'
			Country	A2	
			Application Number	A12	(See also Subrecord '20')
			Registration Number	A12	(See also Subrecord '45')
			Denomination	A60	
75	Other relevant information	1	ID Number	A8	
			Subrecord Type	N2	'75'
			Statement	A5	(See Note 7)
80	Notes	5	ID Number	A8	
			Subrecord Type	N2	'80'
			Note Sequence Number	N	'1' to '5'
			Free Text		Maximum 18 x 50 (See Note 8)

UPOV RECORD DESCRIPTIONS

NOTES

General Notes

(a) Country indication in WIPO ST3 or ISO 3166
(b) Dates in ISO format: YYYYMMDD

Note 1: Values have the following meaning

U = National Variety Protection file data
P = National Patents file data

Note 2: See Annex 1

Note 3: Status Codes: 2 alpha positions as follows:

AF: application filed
AP: application published
AW: application withdrawn
AR: application rejected

Note 4: Status Code: 2 alpha positions as follows:

DF: denomination filed
DP: denomination published
DW: denomination withdrawn
DR: denomination rejected
DA: denomination approved
AP: approval of denomination published

Note 5: See Annex 2
Status Code: 2 alpha positions as follows:

PG: protection/patent granted
PP: protection/patent published
PT: protection/patent terminated
PW: protection/patent withdrawn
PE: protection/patent extended (renewed)

Note 6: Status Code: 2 alpha positions as follows:

AF: application filed
AP: application published
AR: application rejected
AW: application withdrawn

RA: registration accepted
RP: registration published
RW: registration withdrawn
RT: registration terminated
RR: registration renewed

UPOV RECORD DESCRIPTIONS

Note 7: The statements can be:

'marketed since + date'
'in gene bank since + date'
'in International Register'
'in private catalogue'
'in other publications'
'Reference: + literature reference'

Note 8: Free text can be

(a) DUS testing information
(b) VCU testing information
(c) Any other information deemed necessary

UPOV RECORD DESCRIPTIONS

Attachment 1

A. Plant Variety Application Numbering Systems:

Country	Format	Example	Notes
FR	NNNNN	11277	
DE	AAbNNN	EP 147	First 3 positions mnemonic for class
	AAAbNN	PHA 18	
	AbNNNN	K 2717	
GB (AFP)	NN/NNNN	51/332	First 2 positions = UPOV Class?
		10/61	
		15/1672	
NL	AAAbNNNN	UIG 78	First 3 positions mnemonic for Dutch
		BUV 4	name
		CHR 1298	
BE	AAbNNN	H 52	
		Rd 10	
		A 706	
DK	NNNN	3149	
US	NNNNNNN	9100212	First 2 positions = year
ZA	AAbNNNN	PT 1223	
CH	NN-NN-NNN(N)	92-20-817	First 2 positions = year, positions 4 and 5 = class, positions 7 to 9 = sequence number
ES	NNNNNN	912966	First 2 positions = year
		871722	
PL	ANNN(N)	W126	
		O432	
IL	NNNN	1803	
NZ	AAN/N/NN/NNN	PV3/2/58/20	11 positions!
		PV3/2/2/370	

B. Variety Denomination Requests

FR	NNNNN	62535	
DK	NNNNN	90107	First 2 positions = year

UPOV RECORD DESCRIPTIONS

Attachment 2

Plant Variety Certificate Numbering Systems:

Country	Format	Example
FR	NNNN	6737
DE	Same as application numbering	
GB	Same as application numbering	
NL	NNNN(N)	9752
BE	Same as application numbering	
DK	NNNN	2345
US	Same as application numbering	
CH	Same as application numbering	
PL	ANN(N)	R52 O51
IL	NNN(N)	126 846
NZ	NNN(N)	672 679
ES	NNN(N)	3 66 345
ZA	ZANNNNN	ZA92723 (Positions 3 and 4 seem to be the year)

[Annex V follows]

ANNEX V

COST ESTIMATE FOR THE PREPARATION OF A CENTRAL COMPUTERIZED DATA BASE OF UPOV VARIETY DENOMINATIONS ON CD-ROM (UPOV ROM)

(prepared by the expert from WIPO)

A. Basis of calculations

1) CD-ROM would use previous work done by Jouve for WIPO under the ROMARIN project (operational) and JOPAL project (initiated; due February 1993).

2) UPOV work would be subcontracted to WIPO. WIPO will negotiate an "addition" to the ROMARIN contract with Jouve.

3) Development of UPOV ROM would be for MS DOS 5.1 and Windows 3.0 at least (PC: 386 or higher).

B. Development Cost

(i) Assuming up to 14 indexes (parameters yet to be decided);

(ii) assuming standardized data from all cooperating offices;

(iii) assuming (for the present) one language (English) user interface,

	French francs	Swiss francs*
the development cost is estimated at about	300,000	70,850
This would include the production of a WORM (Write Only Read Many) for validation purposes <test disk> plus 100 prototype CD ROMs.		

C. Production Cost (for instance 4 CDs per year)

(i)	Data preparation: 0.10 FF/record (assuming 30,000 average)	3,000	809
(ii)	Mastering	15,000	4,042
(iii)	100 copies (20 FF/copy)	2,000	539
(iv)	Software license (20 FF/disc)	2,000	539
	Production cost per CD-ROM (maximum)	22,000	5,929
	Total production cost per year for 4 CD-ROMs	88,000	23,716

* The costs have been calculated in French francs and have been converted by the Office of the Union into Swiss francs (exchange rate of October 13, 1992: 26,95).

[Annex VI follows]

ANNEX VI

VARIETY DENOMINATIONS DATA BASE FOR THE UPOV MEMBER STATES

Introduction

1. The main purposes of a UPOV Data Base would be to avoid

(i) accepting identical or very similar denominations for plant varieties in the same plant variety class or a closely related class in the UPOV member States, and

(ii) each country separately entering plant variety data extracted from Gazettes in its own data base;

2. In order to comply with its obligations under the Convention, each UPOV member State should have a record of, and regularly receive updates in respect of, all variety denominations of all other UPOV member States, including those collected

(a) in national UPOV "registers",
(b) in national "listings",
(c) from other national sources made available by the national Offices (especially those in respect of ornamental and fruit varieties).

The Technical Solution

3. The appropriate technical solution depends on various parameters such as:

(i) the number of records, length of data records, frequency of updates and record content;

(ii) whether simple or sophisticated search tools are to be made available for the data base, and

(iii) whether or not these search tools are to be delivered with the data base.

The Medium of Data Transfer

Magnetic tapes

4. Magnetic tapes can be ruled out because they are outmoded, expensive and not within the reach of most Offices.

Diskettes

5. Diskettes (3.5" : 1.44 Mb or 5.25" : 0.7 Mb) are a possibility for data transfer since most UPOV Offices have or could have a PC at their disposal. A "macro module data entry sheet" could be designed by UPOV/WIPO and copied to all UPOV member States for preparing the submission of data at regular intervals, in a standard format, to Geneva. The Office of UPOV would check, collate and consolidate national data into an international data base and in turn redistribute that data to all UPOV member States on diskette(s).

6. "Diskette" or "diskettes" would be the question, since the redistribution of the international data base would very quickly need more than one diskette in view of the problem of limited capacity. If, for example, one plant variety record covers 100 positions, then a 3.5" diskette could hold a maximum of approximately 10,000 records; if the record length covers 200 positions, the capacity would be reduced to 5,000 records.

7. If the diskettes were "centralized" at the Office of UPOV, this would mean equipment costs of at least 20,000 Swiss francs and recurrent staff costs of at least 0.5 man/year at G6-level, amounting to 72,000 Swiss francs per year.

8. If the record content were to be as specified in Annex III or IV, then the macro module data entry sheet would be more complicated and for major UPOV member States one diskette per month would not be enough to transfer this data to the Office of UPOV.

9. The diskette solution would only be a system to transfer data to and from a central place. No search tools would be provided and possibilities would be limited to standard text processing "sort" and "search" gimmicks or tricks.

CD-ROM

10. CD-ROM would be the preferred centralizing and de-centralizing data exchange medium for plant variety denominations. It would have the following advantages:

(i) It would permit a gradual expansion (minimum data > maximum data);

(ii) It would have an almost unlimited capacity for redistribution of data (up to 650 Mb of data, i.e. capacity of 450 3.5" diskettes);

(iii) It would permit the distribution of data in "value added" form. Since all or several data fields could be made searchable on the data exchange medium, i.e. on the CD-ROM itself, all UPOV Offices (small and big) would possess identical and standardized tools for retrieval of variety denominations;

(iv) Image data could be added if so desired;

(v) The CD-ROM solution would not entail extra recurrent staff or equipment cost for the Office of UPOV, except start-up cost such as visits to Offices, to contractor, etc;

(vi) The principle of centralizing data would be as described in the diskette solution above: standard macro module data entry sheets for small offices and a standard identical "output" format for major UPOV member States which already possess the data in electronic form. The "central place" would not be the Office of UPOV but the UPOV/WIPO CD-ROM contractor;

(vii) CD-ROM could be made downloadable so that any Office so desiring could download any data which it has not yet incorporated into its own central computer data base from the CD-ROM for further processing, e.g. searching for variety denominations with specially designed "search algorithms"

Preparation of a CD-ROM

11. The preparation of a CD-ROM would include the following steps:

(i) at the contractor's site:

- receipt of data
- merging of data into a cumulative form
- indexing of data fields for which searching is to be provided
- merging of reformatted data, indexes and search software (not always on CD-ROM, possibly on diskette)
- ISO 9660 formatting
- forwarding to pressing company

(ii) at the CD production site:

- CD formatting
- premastering as "positive" master disk
- mastering as "negative"
- pressing "positive" discs
- despatch.

Cost factors involved in CD-ROM production

Development costs

12. When starting from scratch, i.e. not using an existing model, the development costs for a CD-ROM would be between 140,000 and 200,000 Swiss francs.

13. By using an existing model, e.g. ROMARIN, the cost could be reduced considerably. The UPOV ROM would have several ROMARIN-like features, the most important ones being the UPOV class vis-a-vis Nice class and the denomination "name" vis-a-vis markname. The rest of the data on ROMARIN and in UPOV ROM would be merely procedural.

14. For the ROMARIN data fields (18 in all, including one extremely long list of goods and services), 14 are indexed, i.e. indexes are provided on the disc which allow searching. The "search" fields can moreover be "connected" by Boolean logic operators such as "NOT", "OR" and "AND". The "connection" at the moment of search is part of the "search engine" provided with or on the CD-ROM, for instance the ROMARIN (UPOV ROM) search engine can retrieve all marks that have a same "owner" (e.g. Nestlé), and are of Italian or French origin, but which do not protect "chocolate".

15. The "search engine" features have been developed for the ROMARIN application and hence are available to UPOV (if the same contractor is used as for ROMARIN), so, left, right and internal truncation search is possible in any of the search fields such as

(i) dates: 1989* retrieves all 1989 dates in a data field, 199002* retrieves all February 1990 dates in a data field;

(ii) Latin name: beta* retrieves all names which have the word or wordpart "beta" included;

(iii) denomination: *omar* retrieves all denominations that
- start with omar (such as omarus)
- end with omar (such as skomar)
- have the letter sequence omar in them (such as ROMARIN, homard);

16. It is estimated that under similar prerequisites a UPOV ROM would cost 50% less than ROMARIN to develop, i.e. between 70,000 and 100,000 Swiss francs. ROMARIN data come however each month from one place, WIPO, Geneva, in the same format (slight modifications can be accepted). UPOV ROM data will ultimately come from 22 or more sources, therefore the data format is crucial and must be used by all.

17. The data format can be open-ended, e.g. as designed in Annex IV, empty fields are recognized by the contractor's computer program and dealt with. I.e. the data format would permit various UPOV member States to adjust step by step and provide, as time goes, more and more complete data.

18. If an extra language user interface is provided (only one user interface was taken into account in the above calculation), 10,000 Swiss francs would be added to the development cost.

Recurrent Costs

19. The following recurrent costs would occur:

(i) merging of data or reformatting into one single format (if UPOV member States deliver the data in a standard format there would be no cost);

(ii) ISO 9660 formatting and indexing (the producer normally charges a fee of 0.10 - 0.15 Swiss francs per record formatted and indexed);

(iii) pressing cost (the price per unit depends on the number of original discs pressed per year: normally 6,000 to 7,000 Swiss francs per disc. If the WIPO "filière" is followed: 4,000 Swiss francs per disc);

(iv) copy cost (depending on the number of copies made: for 100 copies it would be 6 Swiss francs per disc if passed via WIPO);

(v) license cost (the license cost for the CD-ROM search software would be as for the copy cost: for 100 licenses 6 Swiss francs per license if passed via WIPO).

UPOV data to be exchanged and included in the CD-ROM

20. If restricted to the checking of variety denominations, the data base should provide for the inclusion of the following information as an absolute minimum:

- country of origin: 2 positions (code)
- Latin name
- variety denomination (pending or accepted)
- whether in register for variety protection, on national listing or from another source;
- a "date" to indicate since when denomination is or might be valid;
- UPOV class (if known)

(With this solution, all data fields to be made searchable as indicated above)

21. There is no such thing as a maximum, however, in practical terms, anything between the above absolute minimum and the proposals in Annexes I, III and IV could be feasible. It would be up to the member States to decide whether it would be necessary or desirable to go beyond the absolute minimum in the initial phase of the UPOV ROM project.

Comparison of Costs for Different Solutions

22. The difference in cost between (i) the absolute minimum given above, (ii) the minimum proposed by the Technical Working Parties and listed in Annexes I, III and IV, and (iii) a possible extended data base including technical information on the varieties is given below. Each of the three possible solutions has, however, its own range of possible use. When comparing the cost and selecting the information to be included in the data base at the initial stage, the increase in cost of including information in excess of the absolute minimum should be set against the benefit of the possible extended use of the data base.

23. According to the information on pages 3 and 4 of the present Annex, the costs for the three possibilities

(i) absolute minimum (Solution 1);
(ii) minimum proposed by Technical Working Parties (Solution 2);
(iii) extension covering also technical information (Solution 3);

would be as follows:

	Development Costs (in Swiss francs)	Production Costs (in Swiss francs)
Solution 1	60,000	25,000
Solution 2	70,000	25,000
Solution 3	80,000	25,000

In order to facilitate the establishment of the data base, it is clear that the option of starting with Solution 1, whilst designing the data base from its inception in such a way that Solutions 2 and 3 could be included at a later stage without avoidable additional development cost, has obvious advantages.

Financial Implications for the UPOV member States

24. The financial implications for the UPOV member States would be as follows:

(i) For the offices which are "sophisticated-in-automation": There would be no great financial implications for those offices which are "sophisticated-in-automation", except for

(a) the cost of regularly extracting the data

(b) the cost of purchasing a CD-ROM drive and an MS DOS 5.0 Windows software package (assuming that a PC and a printer are available, the total investment cost would be 3,000 Swiss francs and the total recurrent cost negligeable).

(ii) For those offices that are not automated: The costs for the non-automated offices would be as follows:

(a) The costs for the purchase of a PC WS (see the "Minimum requirements for a UPOV ROM work station" on page 7 of the present annex), CD ROM drive and software as indicated in 24(i) above would be a minimum of 10,000 Swiss francs but could be much less if a grouped UPOV order was placed;

(b) The extra data entry cost (on same PC almost nil).

Possible Time table

25. The following could be a possible time table for the setting up of a UPOV Data Base:

May 1993	:	green light from CC for Solution 1 or 2 described above
June 1993	:	establishment of data exchange format, allowing for the maximum exchange solution
July 1993	:	transfer of exchange format standard to UPOV member States
September 1993	:	Final establishment of development cost
October 1993	:	preparatory work at UPOV member States
November 1993	:	approval of preparation of prototype by CC + decision of current budget
January 1994	:	transmission of test data by all UPOV member States
March 1994	:	prototype validation by expert panel
May 1994	:	first production disc.

MINIMUM REQUIREMENTS FOR A UPOV ROM WORK STATION

Equipment

Central unit:	Processor	: INTEL 80386 or 80486 (BUS ISA)
	Frequency	: 25 MHz or more
	Central memory	: minimum 4 Megabytes
	Diskette	: 3.5 inch - 1.44 Megabytes
	Hard disc	: 80 Megabytes minimum
	2 serial ports - 1 parallel port	
	Super color VGA screen controller	
	Keyboard	: 102 keys (QWERTY or AZERTY)
	Mouse	: Microsoft compatible

Screen: Super color VGA 14 inches (1024 x 768 pixels) with PC interface
256 grey-scales

CD-ROM drive: Preferably internal CD-ROM drive compatible ISO 9660 (High Sierra) of more than 650 Megabytes in cartridge with minimum access time of less than 0.4 seconds; pilot of the disc: Microsoft MSCDEX.EXE

Printer: Laser LBP-4 PLUS, CANON, serial, parallel and video interface or Laser PG 306, Olivetti, serial, parallel and video interface

Software: MS-DOS 5.0
MS/Windows Version 3.0
Drivers for screen and printer.

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