1. BASIC INFORMATION

1.1 Désirée Number: 2002/000-180-01-02
   Twinning Number: HU/02/IB /AG-02

1.2 Title: TSE (Transmissible Spongiform Encephalophaty) control

1.3 Sector: Agriculture

1.4 Location: Hungary

2. OBJECTIVES

2.1 Overall Objective(s):

The effective transposition of the EU disease control Acquis.

2.2 Project purpose:

To facilitate the introduction of TSE screening in Hungary as prescribed in the Regulation 999/2001/EC.

2.3 Accession Partnership and NPAA priority

The project components are in line with the following AP and NPAA priorities:

Accession Partnership

The recently revised Accession partnership includes the following priority under Agriculture:

Complete transposition of legislation in the veterinary and phytosanitary field (legislation on transmissible spongiform encephalopathies, plant passports, maximum residue levels, animal nutrition) and ensure implementation and enforcement.

National Programme for the Adoption of the Acquis

The NPAA indicates as a priority a number of measures to be implemented in terms of "Epidemic protection" including specific actions on BSE control.
2.4 Contribution to National Development Plan: Not applicable

2.5 Cross Border Impact: Not applicable

3. DESCRIPTION

3.1 Background and justification:

*TSE lab + prion tests:

In order to assure consumers in- and outside the country about the safety of Hungarian meet and products of animal origin, Hungary needs to verify its BSE status. The EU Scientific Advisory Commission placed Hungary in the third category (which means probable BSE cases) concerning BSE risk classification of the countries in spite there have been no BSE cases found in Hungary yet. In order to prove Hungary's BSE free status it is necessary to comply with EU conform examination methodology which are described in the following Decisions:


The Zoosanitary Code issued by the Minister of Agriculture Decree No 41/1997/ V.28, Article 498 describes the control and monitoring on TSE. The Decree is under revision and the full harmonisation shall be completed till 31. December 2001. Further amendments will follow the EU practice.

To specify the way of the monitoring according to the above EC Regulation the Chief Veterinary Officer of Hungary issued circular letters No. 32505/2001 and No. 32505/1/2001.

The relevant instructions of the above circular letters are as follows:
The Chief Veterinary Officer has put the Central Veterinary Institute in charge of the examination of BSE in Hungary on bovine animals, for the testing of sheep two other Regional Veterinary Institutes has been entrusted with carrying out TSE tests. Based on these circular letters, monitoring type examinations are carried out presently, which means that killed, emergency slaughtered, died and animals showing symptoms of disease of nervous system are tested. The circular letters also contain the reporting obligations and the templates of the reports.

Hungary has already a small capacity lab at the Central Veterinary Institute in which the mentioned examinations are currently executed. The National Veterinary Institute has already executed the reconstruction and extension of this lab from national funds in 2001. In case Hungary wants to satisfy the above criteria of the EU this lab needs to be further equipped.

To comply totally with the above EC Regulation Hungary will have to apply rapid (prion) tests on approximately 100 000 bovine animals per a year. It is only possible to acquire prion (rapid) tests from one of the member states and it is necessary to develop a special background lab for
the histopathology examination, immunocytochemistry, immuno-blootting or demonstration of characteristic fibrils by electron microscopy which examinations are requested as control measures.

Phare Assistance will support Hungary in this first, bi-annual, period of full application of the EU requirements by providing a flat contribution of 15 € per test which is in line with the contribution provided by the Community Budget to the Member States. It is expected that after this first period Phare assistance will be phased out.

The related measures taken and financed by the Hungarian authorities:
- Since 1989 the histopathologic examination of 10,000 dead or slaughtered animals has been executed, all with negative results.
- Since April 2001 the Veterinarian Authority ordered to apply monitoring prion tests in case of emergency slaughtered or dead animals. Since July 2001 Hungary has began the prion testing of those animals, which are normally slaughtered after 30 month of age.
- The regular collection of the samples from the slaughterhouses is organised.
- Since April 2001 the separate collection and destruction of the specific risk material has been ordered.
- Since April 2001 it is forbidden to make use of the meat meal originating of dead animals. In Hungary there is currently around 7000 tons of meat meal cumulated and waiting for being destroyed.
- Current Proposal for Government of the Minister of Agriculture and Regional Development contains the requirement for a high capacity incinerator for SRM. This proposal is under approval by the concerned Ministers.

It is necessary as well to train certain group of persons because of the introduction of new control measures and processing methodologies. In order to inform and educate well the staff in contact with meet during the processing and control we need to train our personal at two levels. First step is to train the vets executing the control on slaughterhouses, the second level is the training of the personal at slaughterhouses.

It is necessary to keep informed the concerned parties at each level such as breeders, producers, consumers, media as well.

3.2 Linked activities:

**HU9004-02-06 Development of quality control**

The project financed the procurement of laboratory for the County Veterinary and Food Control Stations of Bács, Borsod-Abaúj-Zemplén, Hajdú-Bihar, Somogy and Veszprém counties.

**HU9806-01-03 Upgrading of diagnostic laboratories**

The project helped to modernise the veterinary laboratories in Hungary, such as National Food Investigation Institute, Central Veterinary Institute, National Institute for Veterinary Drugs and Feeds and the Regional Veterinary Institute of Kaposvár, Debrecen.

**HU0003-01-01 Laboratory supply project**
The project helps modernising the food control laboratories such as National Food Investigation Institute, National Institute for Veterinary Drugs and Feeds and six Regional Animal Health and Food Control Stations.

3.3 Results

- EU’s TSE control practice transposed
- 100,000 pcs of prion tests conducted annually
- EU conform laboratory capacity in place

3.4 Activities

Project activities include the preparation and implementation of one twinning arrangement on TSE control, and two supply contracts on laboratory equipment and prion tests.

3.4.1 Twinning

A twinning project will assist the State Veterinary Services (SVS) in transposing and implementing the EU veterinary control systems in Hungary. Based on the transposition plan, the twinning experts will work together with the expert staff of the Animal Health and Food Control Department of the Ministry of Agriculture and Regional Development (MARD) on the harmonisation of the food hygiene control system and the TSE control system.

3.4.1.1 HU/2002 Twinning– TSE control

The TSE control system harmonisation will cover technical harmonisation, vet training and training of the personnel at slaughterhouses, workshops for both concerned parties, surveying TSE laboratories and information systems and bovine slaughterhouses. The relevant EU directives are listed in Annex 5 as well as the Hungarian regulations.

The scope of the twinning project (tasks of the PAA):

TSE control

- Transposition and implementation of EU’s TSE control system
- Conducting training in Hungary and abroad for TSE lab experts on new TSE control developments and techniques used in EU countries. Training for personnel at slaughterhouses. Likely training topics include: practical directions for the personnel in direct contact with meet during the processing.
- Review the current Hungarian regulations and recommending modifications if necessary
- Further harmonisation of the Hungarian legislation with the EU acquis in this field and implementation
- Assess practices affecting TSE control (at labs and at slaughtering, sample taking) and proposing measures to be taken by the authorities if necessary
• Provide training abroad and in Hungary for some 30 veterinarians of the 20 Animal Health and Food Control Stations who are responsible for the TSE control and training of slaughterhouse personnel.
• Organisation of the information flow either to concerned parties or to the public.

The duration of the project and the stay of the PAA will last 4+2 months within 12 months.

**Guaranteed results of the twinning project:**

EU conform TSE control system operating in Hungary. Technical harmonisation implemented. About some 30 Hungarian vets trained and the personnel at slaughterhouses educated, public well informed.

### 3.4.1.2 Profile of the PAA

The PAA should have the following profile:

• a trained veterinarian with significant practical experience in the field of control of TSE in lab.
• excellent inter-personal and communication skills
• initiative and co-operative attitude
• fluency in English

### 3.4.1.3 Short and medium term experts

Areas not directly covered by PAA as control at slaughterhouses and at each level of the TSE surveillance and control, can be taken over by short- and medium-term experts within the limits of the budget as stated in section 5 of the present fiche. The concrete assignments will be subject to the preparation of the technical Covenant and the recommendations of the twinning partner(s).

### 3.4.2 TSE laboratory supply and prion tests

The development of TSE lab is indispensable in order to avoid assumed zoonozis. The TSE prion tests that Hungary needs to implement are available from EU countries.

In the frame of the project the TSE laboratory will receive 200,000 prion tests /the calculated need for **two years**/ and laboratory equipment to improve the capacity of TSE screening in Hungary as prescribed in Regulation (EC) No 999/2001 of the European Parliament and of the Council. (See Annex 6)

The currently approved prion /rapid/ tests are listed in the point 4, Chapter C, Annex X of the 999/2001EC Regulation (Prionics Check test, Enfer test, BIORAD test).

Considering the particularities of the prion test supply the technical specification may be different from the regular ones.
3.5 Lessons learned

Under the Annual Assessment Report R/HU/AGR/00043 recommendations were made which are relevant to the current project. Design recommendations concerning indicators of achievement (point 2.3 of the Report), twinning activities (last bullet point of 4.2.3 on p.21) and other recommendations under point 6.2 of the Report and in particular point 6.1.8 of the Report have been addressed while drafting the current project fiche. The Implementing Agencies and the Project beneficiaries will ensure that management recommendations will be addressed as appropriate.

4. INSTITUTIONAL FRAMEWORK

Overall, technical and administrative aspects of implementation shall be the responsibility of the Agricultural Phare Office of the Ministry of Agriculture and Regional Development.

The Ministry’s Animal Health and Food Control Department and the Department of Agriculture will manage the professional implementation. Participating institutions including the followings:

Central Veterinary Institute (Address: Budapest, Tábornok utca 2.), the only responsible and reference laboratory for TSE control.

4.1 Detailed Budget

<table>
<thead>
<tr>
<th></th>
<th>Phare</th>
<th>Support</th>
<th>Total Phare (=I+IB)</th>
<th>National Cofinancing*</th>
<th>IFI</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Twinning /TSE control</td>
<td>0.8</td>
<td>0.8</td>
<td>0.8</td>
<td>0.2</td>
<td></td>
<td>1.0</td>
</tr>
<tr>
<td>Supply of lab. equip.</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.2</td>
<td></td>
<td>0.5</td>
</tr>
<tr>
<td>Supply of prion tests</td>
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<td>3.0</td>
<td>3.0</td>
<td>1.6</td>
<td></td>
<td>4.6</td>
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<tr>
<td>Total</td>
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<td>0.8</td>
<td>4.1</td>
<td>2.0</td>
<td></td>
<td>6.1</td>
</tr>
</tbody>
</table>

*The Government co-financing for the twinning activity is an estimated indicative amount and will not be part of the budget of the twinning covenant. It provides an indication of the resources in cash or in kind that the beneficiaries will have to mobilise to cover the necessary counterpart expenses arising from the implementation of the twinning.

The supply of laboratory equipment will be jointly co-financed between Phare and Government resources. The Phare amount is binding as a maximum amount available for the project. The ratio between the Phare and the national amount is also binding and has to be applied to the final contract price.

The supply of prion tests will be jointly co-financed between Phare and Government resources. The Phare amount is binding as a maximum amount available for the project. The ratio between
the Phare and the national amount is also binding and has to be applied to the final contract price. However Phare contribution cannot, under any circumstances, exceed the ceiling of 15 € per test.

6 IMPLEMENTATION ARRANGEMENTS

6.1 Implementing Agency

The Implementing Agency of the project is the Central Finance and Contracting Unit, which is responsible for tendering and contracting.

Her contacts are:

PAO: Ms. Judit Rózsa, director general
CFCU, Public Finance Office,
H-1052 Budapest, Deák Ferenc u. 5.
Tel.: +36-1-327-3652, +36-1-327-3650
Fax.: +36-1-327-3572, +36-1-327-3573
e-mail: judit.rozsa@ahh.gov.hu

The Ministry of Agriculture and Regional Development will be responsible for the technical part of the project in terms of design, evaluation, follow up and monitoring. The Head of the Directorate for Integration Affairs will act as Senior Programme Officer. His contacts are:

SPO: Dr. László Vajda, Head of Directorate
Ministry of Agriculture and Regional Development,
H-1055 Budapest, Kossuth tér 11.
Tel.: +36-1-331-3578
Fax.: +36-1-301-4663
e-mail: laszlo.vajda@fvm.hu

6.2 Operating environment

The Animal Health and Food Control Department of MARD will be the counterpart for the twinning program together with the Central Veterinary Institute.

The beneficiary institutions will be the Ministry of Agriculture and Regional Development and the Central Veterinary Institute, contact persons are:

- Dr. Antal Németh, head of Department for Animal Health and Food Control, MARD,
- Dr. Krisztina Konrád, Department for Animal Health and Food Control MARD, (Tel: 36-1-301-4292)
- Dr. Lajos Tekes, Director of the Central Veterinary Institute (36-1-252-7278)
- Dr. Zsolt Szilágyi, Chief Senior Counsellor, Agricultural Phare Office (36-1-301-4604)
6.3 Non-standard aspects

The Practical Guide for Phare, ISPA and SAPARD contract procedures and Twinning Manual will strictly be followed in relation to the Twinning Covenant and the Supply of Laboratory Equipment.

As per the test kits according to Annex X of Regulation (EC) No 999/2001 of the European Parliament and of the Council of 22 May 2001 there are only four possible methods that can be utilised for rapid tests for BSE and each test is available only from the producing company. Hungary has decided to use the BIORADE test and invested in training and specific equipment as necessary to administer the test. Hence for the procurement of this component the contracting authority will conclude a direct agreement with the sole supplier of BIORADE tests. It is understood that Phare contribution will, under no circumstances, exceed the amount of 15€ per test kit.

6.4 Contracts

1. The program shall be implemented through one twinning covenant of an estimated value of 0.8 M€ and two supply contracts of 0.5 and 4.6 M€ (including Phare and Government contributions) respectively.
<table>
<thead>
<tr>
<th>Contract</th>
<th>Start of Tendering</th>
<th>Start of Project Activity</th>
<th>Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Twinning TSE control</td>
<td>12/2001</td>
<td>06/2002</td>
<td>05/2003</td>
</tr>
<tr>
<td>Supply (prion tests)</td>
<td>04/2002</td>
<td>09/2002</td>
<td>09/2003</td>
</tr>
</tbody>
</table>

8. **EQUAL OPPORTUNITY**
There will be no discrimination between sexes in the project

9. **ENVIRONMENT**
The project has no discernible negative effect on the environment.

10. **RATES OF RETURN**
Not applicable

11. **INVESTMENT CRITERIA**
n.a.

12. **Conditionality and sequencing**
- Zoosanitary Code / Decree No 41/1997/ V.28, Article 498 on TSE control and monitoring, of the Minister of Agriculture, the full harmonisation shall be completed prior to the FM is signed. Further amendments will follow the EU practice.
Annexes to project Fiche

1. Logical framework matrix in standard format
2. Detailed implementation chart
3. Contracting and disbursement schedule by quarter for full duration of programme (including disbursement period)
4. List of relevant Laws and Regulations
5. Checklist for the purchase of laboratory equipment
ANNEX 1

Phare logical framework matrix

<table>
<thead>
<tr>
<th>LOGFRAME PLANNING MATRIX FOR TSE (Transmissible Spongiform Encephalopathy) control</th>
<th>Programme name and number 2002/000-180-01-02</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contracting period expires: 30.11.2004</td>
<td>Disbursement period expires 30.11.2005</td>
</tr>
<tr>
<td>Total budget : 6.1 Meuros</td>
<td>Phare budget: 4.1 Meuros</td>
</tr>
</tbody>
</table>

**Overall objective**

- The effective transposition of the EU disease control and Acquis

**Objectively verifiable indicators**

- Positive assessment of the transposition of disease control acquis by the accrediting authority

**Sources of Verification**

- Accreditation documents

**Project purpose**

- To facilitate the introduction of TSE screening in Hungary as prescribed in the Regulation 999/2001/EC.

**Objectively verifiable indicators**

- 100,000 pcs prion tests conducted per year

**Sources of Verification**

- Reports of the National Veterinary Service on BSE tests

**Assumptions**

- All facilities in place for swift action in case of cattle testing BSE positive
- Sustainable funds available for prevention and containment measures

**Results**

- EU’s TSE control practice transposed
- TSE lab equipped as required for being able to evaluate prion tests
- Personnel trained

**Objectively verifiable indicators**

- All twinning arrangements, studies, training services and supplies completed and delivered in time and at the right levels of quality and quantity, as planned
- Justified TSE-status classification

**Sources of Verification**

- Hand over notes
- Progress reports by the National Veterinary Service

**Assumptions**

- Trained staff can be retained by the National Veterinary Service
- Funds for operating the laboratory and conducting the prion test available when needed staff
<table>
<thead>
<tr>
<th>Activities</th>
<th>Means</th>
<th>Assumptions</th>
</tr>
</thead>
</table>
| National Veterinary Service                    | • One supply contract for laboratory equipment, one twinning for the TSE control (including the training experts)  
• One supply contract for laboratory consumables (prion tests) | • High quality project management ensured throughout              |

<table>
<thead>
<tr>
<th>Preconditions</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Staff and co-financing available when required</td>
<td></td>
</tr>
<tr>
<td>• Harmonisation of the Article 498 of the Decree No 41/1997/ V.28.</td>
<td></td>
</tr>
</tbody>
</table>
## ANNEX 2

### Detailed Implementation Chart

<table>
<thead>
<tr>
<th>Year</th>
<th>2002</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Month</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Twinning, TSE control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supply lab.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supply prion tests</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Shading:**
  - Light gray: tendering phase
  - Black: implementation phase
ANNEX 3

Contracting and disbursement schedule by quarter for full duration of programme

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Contracting</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Twin TSE</td>
<td>0.8</td>
<td>0.8</td>
<td>0.8</td>
<td>0.8</td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
<td>• Supply lab</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>• Supply tests</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total (cumulative)</strong></td>
<td>0.8</td>
<td>3.8</td>
<td>4.1</td>
<td>4.1</td>
<td>4.1</td>
<td>4.1</td>
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<tr>
<td><strong>Disbursement</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Twin TSE</td>
<td>0.3</td>
<td>0.5</td>
<td>0.6</td>
<td>0.7</td>
<td>0.8</td>
<td></td>
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<tr>
<td>• Supply lab</td>
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<td>0.3</td>
<td>0.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Supply tests</td>
<td>1.8</td>
<td>2.4</td>
<td>2.4</td>
<td>3.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total (cumulative)</strong></td>
<td>2.3</td>
<td>3.2</td>
<td>3.4</td>
<td>4.1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ANNEX 4

EU regulations


HUNGARIAN regulations

Zoosanitary Code / Decree No 41/1997/V.28, Article 498 on TSE control and monitoring, of the Minister of Agriculture, the full harmonisation shall be completed till 31 December 2001. Further amendments will follow the EU practice.

Commend of the Chief Veterinary Officer No 32505/2001 and 32505/1/2001 on the control of the spread of BSE
ANNEX 5

CHECKLIST FOR THE PURCHASE OF LABORATORY EQUIPMENT

1. What is the ownership of the laboratory? Are any changes in the ownership structure foreseen?

Central Veterinary Institute is owned by the state. The property rights have not been changed since the establishment (1928). Ministry of Agriculture and Regional Development is the only supervisory authority of the institute.

2. What is the plan for usage of this laboratory for the next 5 years? What tests will it focus on? Do you have a stable demand for testing samples? Who are your main clients? What is the plan from the staffing point of view?

The Ministry is responsible for the decisions and determines the actual diagnostic tasks. In connection with growing numbers of BSE (Bovine spongiform encephalopathy) tests and the recent closing of three regional institutes the number of samples is significantly increasing. These tests are mainly based on ELISA, and Western Blot methods, which require special sample preparing. The samples are sent from both state and private owned firms. We can meet these new requirements with recruitment of new employees and increase number of experts.

3. What are the existing laboratories doing similar activities/measurements in Hungary? Is there any competition?

The Central Veterinary Institute is exclusively responsible for the accomplishment of all the BSE investigations.

4. Why the need of increase of capacity/upgrading the equipment?

The new instruments are suitable for diagnosing transmissible spongiform encephalopathies (TSE), improving diagnostic tests for BSE and researching TSE-causing agents (European Commission, Community Research, Transmissible Spongiform Encephalopathies: the European initiative, Luxembourg: Office for Official Publications of the European Communities, September 2000).

5. How and from what sources the additional human resources will be assured? Are adequate training needs to be taken into consideration? If yes, how? Is sustainability in terms of trained human resources assured?

Presently qualified employees are available. We need to develop human resources with qualified staff because of significantly growing number of samples mentioned above.

A. NEEDS ASSESSMENT
1. Description of the current TSE related activity of the National Veterinary Institute

Each cattle showing nervous symptoms should be investigated the same way as each goat and sheep with the same symptoms and without causative diagnosis. Cattle brain samples giving positive or doubtful results in the rapid monitoring test should also be investigated. The sample in case of animals with nervous symptoms is the whole brain and one half of the medulla oblongata from the animals found positive or doubtful in the monitoring test. Both samples should be fixated in 10%-formaldehyde solution.

Prion proteins can be detected from autolysed samples and with immunohistochemical methods. We have adequate number of personnel for the workout and evaluation of the method.

2. Present capacity:

<table>
<thead>
<tr>
<th>Equipment Description</th>
<th>Hours per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tissue processor for paraffin technique:</td>
<td>1404</td>
</tr>
<tr>
<td>Slide microtome:</td>
<td>310</td>
</tr>
</tbody>
</table>

3. Assessment of capacity gap in terms of quantity or quality of equipment

Capacity of the instruments mentioned above is not sufficient, results are of bad/medium quality. The embedding machine is not fast enough (9 h/cycle), it is chemical-wasting and its operation is laborious.

Plans

The institute intends to execute research in molecular biology. That is why it is necessary to apply for PCR equipment. The immunocytochemical tests need a special microscope, which is required for immunofluorescence techniques as well.

Till now some of the outdated, amortised and more decade old equipment have been replaced with the help of PHARE programmes in the past years.

Purchasing of new machines would provide results of far better quality, more effective operation and faster diagnosis. These could also help in avoiding contamination and infection of personnel and the environment.

B. LIST OF NECESSARY NEW EQUIPMENT

The currently approved prion /rapid/ tests are listed in the point 4, Chapter C, Annex X of the 999/2001 EC Regulation (Prionics Check test, Enfer test, BIORAD test). The companies producing these tests define the concrete sensibility and kind of equipment by the evaluation of their test needs to be executed. They undertake the responsibility for the safety of their tests only if the prescribed equipment stock is used for the evaluation in the lab. This way, based on the requirements of the prion test companies, the prescribed equipment stock can not be different from the following:

<table>
<thead>
<tr>
<th>No.</th>
<th>equipments</th>
</tr>
</thead>
</table>
1. Tissue processor for paraffin technique 1 pc
   Availability: 1400 h/y
2. Rotary microtome 1 pc
   Availability: 700 h/y
3. Organ sectioning table 1 pc
4. Cooling plate of the blocks 2 pcs
   Availability: 1300 h/y
5. Automated coversliper 1 pc
   Availability: 1300 h/y
6. Precision balance (incl. Table) 1 pc
   Availability: 100 h/y
7. Microscope for consultations 1 pc
   Availability: 1300 h/y
8. Refrigerator (120 L) 1 pc
   Availability: 1500 h/y
9. Freezer (120 L) 1 pc
   Availability: 1500 h/y
10. Cabinet for dangerous chemicals 1 pc
    Availability: 1300 h/y
11. Thermostat 37 °C, for the rapid incubation 1 pc
    Availability: 1300 h/y
12. Heating plate 1 pc
    Availability: 1300 h/y
13. Back suctioning plate for covering 1 pc
    Availability: 1300 h/y
14. Section dryer 1 pc
    Availability: 1300 h/y
15. Autoclave for antigen exposure 1 pc
    Availability: 1000 h/y
16. Autoclave for disinfecting 1 pc
    Availability: 100 h/y
17. ELISA – microplate washer-dispenser 3 pcs
    Availability: 1500 h/y
18. Microbiological safety cabinet Class 2 6 pcs
    Availability: 1500 h/y
19. Ultracentrifuge swinging bucket rotor 1 pc
    Availability: 100 h/y
20. Microplate fluor-luminometer 1 pc
21. Inverted Fluorescent microscope with video documentary system
Avilability:1300 h/y
1 pc
22. Bench-top refrigerated centrifuge
Avilability:1000 h/y
2 pcs
23. Rotator (shaker)
Avilability:1000 h/y
3 pcs
24. Water purification systems
Avilability:800 h/y
2 pcs
25. Magnetic stirrer
Avilability:900 h/y
2 pcs
26. PCR work cabinet
Avilability:1200 h/y
2 pcs
27. Quantitative PCR machine
Avilability:1300 h/y
1 pc
28. Homogenizer
Avilability:1300 h/y
2 pcs
29. Incubator/shaker:
Avilability:1500 h/y
1 pc
30. 37°C incubator (capacity 70 l)
Avilability:1500 h/y
1 pc
31. Precision (8-12 ch.) pipettes (5-50 -µl és 50 –300 µl)
Avilability:1500 h/y
20 pcs
32. Precision (1 ch.) pipettes (5-50 -µl és 50- 200 -µl, 200- 1000 µl, 5 ml )
Avilability:1500 h/y
20 pcs
33. Microplate centrifuge capable of 4000g
Avilability:1500 h/y
2 pcs
34. ELISA reader
Avilability:1500 h/y
2 pcs
35. Automatic pipettor
Avilability:1500 h/y
3 pcs
36. pH-meter
Avilability:500 h/y
2 pcs
38. Cooling microcentrifuge
Avilability:1300 h/y
2 pcs
39. Thermocycler
Avilability:1500 h/y
1 pc
40. Transilluminator
Avilability:800 h/y
1 pc
41. *Microscope* 1 pc
Availabilty: 1500 h/y

42. *Bottle roller* 1 pc
Availabilty: 1500 h/y

43. *96 –well hybridisation block* 2 pc
Availabilty: 1500 h/y

44. *Transfer Tank* 1 pc
Availabilty: 1500 h/y

45. *Shaking bench* 1 pc
Availabilty: 1500 h/y

46. *Oven (for dry heat sterilisation)* 1 pc
Availabilty: 1500 h/y

47. *Heating block* 1 pc
Availabilty: 1500 h/y

48. *Thermostat 56 °C, for the rapid fixation* 1 pc
Availabilty: 1300 h/y