The instruction on placing a FIE logo trade mark with protective RFID marking of the fencing equipment (excluding weapon).

1 Background of system invention

There are possible cases of use of the counterfeit equipment and weapon at the FIE competitions.

As a decision, a protection of the original products is suggested and makes it possible to distinguish a copy from the original with the use of the special protective elements including RFID chip.

In this regard the following actions have been implemented:

- Invention of an automated system (AS) which provides centralized storage of the information about each unique product item turned out by the certified producer with the following verification of this information (authentication of the original products);
- Special marking by the certified manufactures of their products with the unique RFID tags, copy protected. During marking special information is recorded by AS which is used for authentication in future.

Proposed methods and counterfeit protection technologies.

- Building in special RFID tags into equipment and weapon.
- Automated system with the central data base of the original products descriptions and electronic keys for access to the descriptions;
- Use of different cryptography algorithms and also special methods of protection during data storage and data exchange between client workplaces and server part of AS.
- Special marks with unique protective characteristics, allowing holding initial authentication control.

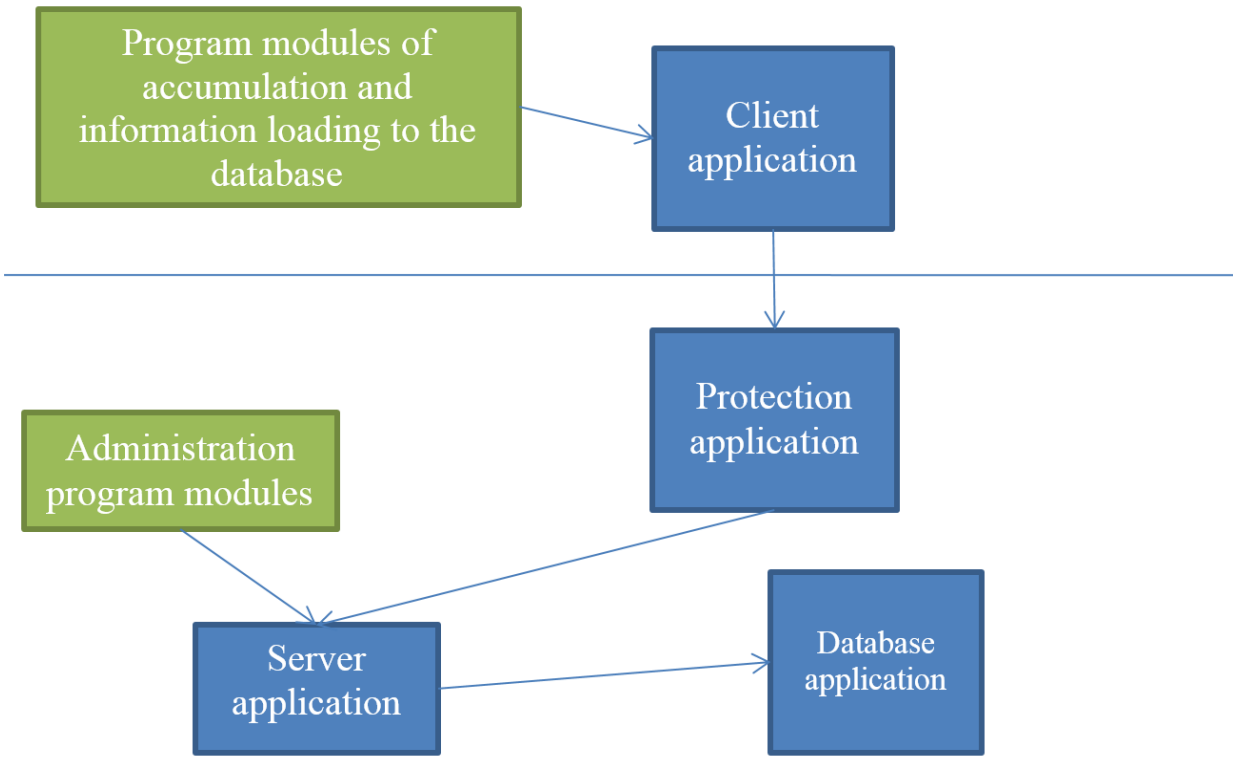
2 Structure of the system

The main system consists of the following components:

- Database application - used for accumulation and storage of the information from different sources necessary for implementation products identification tasks;

- Program modules - developed for information exchange with data base, providing the possibility of automated and manual data input from different sources;

- Administration program modules - providing execution of operations of data base support, users account management and access rights differentiation of system resources.



- Client application - for work on product authentication workplaces by data reconciliation with the central storage.

- Server application - providing registration functions, analytics of statistic data maintenance.

- Protection application - necessary for safe data transmission between client and server.

Special actions are realized for each user category to provide safety and reliability of their independent and joint functioning.

Special software is used as a system tool and provides the access to the data

3 Instruction on application of label and protective RF tags on fencing uniform by International Fencing Federation.

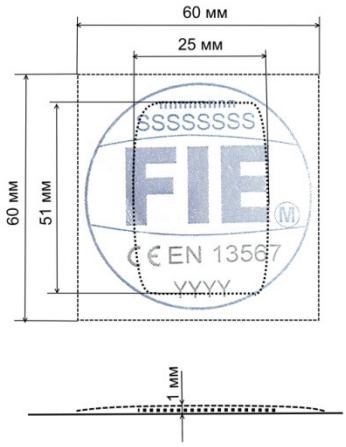
3.1 Description of the label .

Label represents a bit of fabric with adhesive sub layer,60x60 мм or 60x35 мм. There is FIE logo on the face side. Label is glued on a paper roll with a wax layer which removes easily.

3.2 Description of the RF tag.

RF tag is a rectangular plastic piece ,51x25x1 мм in size, with a RFID chip and antenna built inside.

3.3 RF tag installation diagram under the label.



Before sewing of the label, RF tag is fixed in the center on the adhesive layer located on the other side of the label.

3.4 Recommended label installation with the tag on fencing uniform.

3.4.1 Costume

The label with RFID tag is sewed on the back upper side of the jacket.

3.4.2 Breeches.

The label with RFID tag is sewed on the back upper side of the breeches.

3.4.3 Plastron .

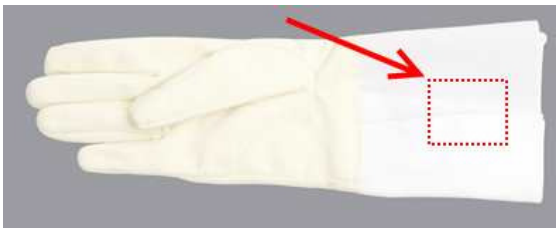
The label with RFID tag is sewed on the front side of the plastron.

3.4.4 Mask.

For the mask, the label 60x35 мм in size with RFID tag is sewed on the inner fabric jut for head fixing.

3.4.5 Gloves.

On the gloves the label 60x35 мм in size without RFID tag is sewed on the inner side of protection.



4. Conclusion.

Each manufacturer, depending on design and production technology of equipment has a right to change location area of the protective elements without changing recommended areas. Protective elements withstand a heat no more than 100°C, repeated mechanical hits and washes up to 20 times with no compromise in protective attributes.