DATA INFORMATION and INTELLIGENT TECHNOLOGY in AGRICULTURE

Roma, 18° of October 2018

ENAMA
Ente Nazionale per la Meccanizzazione Agricola

DATA INFORMATION and INTELLIGENT TECHNOLOGY in AGRICULTURE

1 Short presentation of ENAMA

2 Certification as a tool to validate technologies

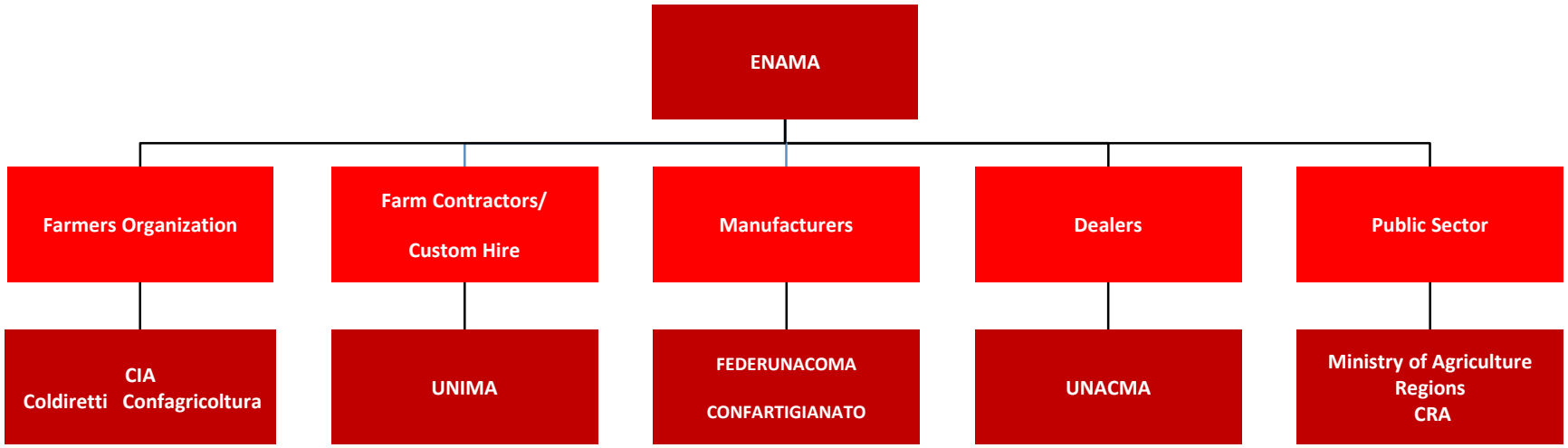
3 Smart Agriculture

4 Smart Agriculture application: the ISOBUS Technology

1
SHORT PRESENTATION OF ENAMA

ENAMA

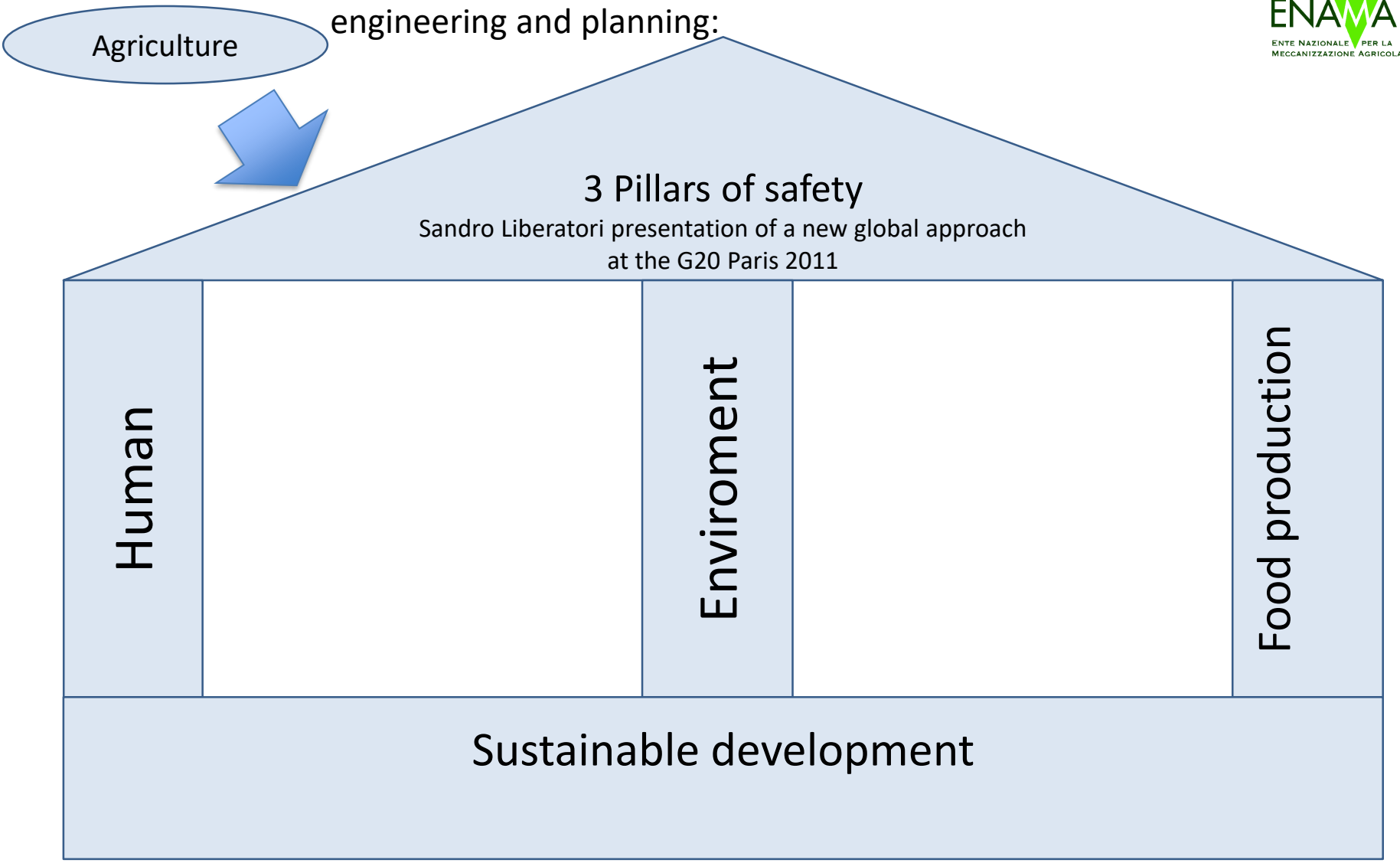
ENTE NAZIONALE PER LA MECCANIZZAZIONE AGRICOLA



- ACTIVITIES IN THE FIELD OF AGRICULTURAL ENGINEERING INCLUDING RESEARCH, PLANNING AND CONSULTING

- ACTIVITIES AS A NOTIFIED CERTIFICATION BODY FOR AGRICULTURAL MACHINERY AND ENERGY PRODUCTION PLANTS IN AGRICULTURE AND THEIR COMPONENTS

ENAMA new approach to agricultural engineering and planning:



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SAFETY OF HUMAN

There are many accidents in agriculture
wordlwide

SAFETY OF THE ENVIRONMENT

SAFETY OF FOOD PRODUCTION

TO GUARANTEE GLOBAL SAFETY AND PROPER PERFORMANCE

CERTIFICATION

IS THE SOLUTION

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Machinery Certification:

ENAMA Certification of performances and safety of agricultural machines

VS ENAMA Certification of safety of agricultural machines

ENAMA Certification of components of agricultural machines

ENAMA/AEF Certification of ISOBUS Technologies

Agroenergy Certification

ENplus Pellet Certification

Agroforestry solid biofuel Certification (together with CIB)

Biogas Plant Certification

ENAMA

Ente Nazionale per la Meccanizzazione Agricola

ENAMA

=

ENTAM

ACCREDIA

ENAMA

Ente Nazionale per la Meccanizzazione Agricola

INAIL, Piazzale Pastore, 6

CONCLUSIONE ITER Roma, 23 Aprile 2013

CERTIFICAZIONE ENAMA

Validità 5 anni o fino al modificarsi delle norme di riferimento

VALIDATION OF TECHNOLOGIES

- ✓ ***Best investment for Governments***
- ✓ ***Guarantee for farmers and dealers***
- ✓ ***Added value for manufacturers***
- ✓ ***BENEFITS FOR DEALERS***

2

CERTIFICATION AS A TOOL TO VALIDATE TECHNOLOGIES

ENAMA – EXAMPLE OF CERTIFICATION PROCESS

ENAMA CERTIFICATION

Safety

Performances

Accreditation

ACCREDIA
L'ENTE ITALIANO DI ACCREDITAMENTO
PRD N° 088 B

Skilled Test Eng.

Check list

N.	Quesito	Si	No	Non previsto	Esempio di soluzione
3.1	Sulla macchina è presente il pittogramma che indica di leggere il manuale di istruzioni e di seguire tutti gli avvertimenti e le istruzioni di sicurezza?	Si	No	Non previsto	
3.2	Sulla macchina è presente il pittogramma che indica che in caso di intasamenti la macchina deve essere arrestata prima di qualsiasi intervento e che occorre attendere l'arresto completo degli utensili?	Si	No	Non previsto	
3.3	Sulla macchina sono presenti dei pittogrammi che indicano le parti in movimento che rappresentano un rischio durante l'uso?	Si	No	Non previsto	
3.4	... omissis ...				

TESTING CENTER

Test Procedure

Good Results

Good Results

ENAMA Certificate

ENAMA CERTIFICATA VS

ENAMA VS brand on the machine

Safety Certification

ENAMA Certificate

ENAMA CERTIFICATA

ENAMA mark On the machine

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THEREFORE THE BEST SYSTEM TO PROVIDE EFFCIENT GUARANTEES IS BASED ON

STANDARDISATION + TESTING + CERTIFICATION

Good examples are:

ENTAM recognized

ANTAM
Asian and Pacific Network for Testing Agricultural Machinery

OECD
BETTER POLICIES FOR BETTER LIVES

3

SMART AGRICULTURE

WHAT IS SMART AGRICULTURE

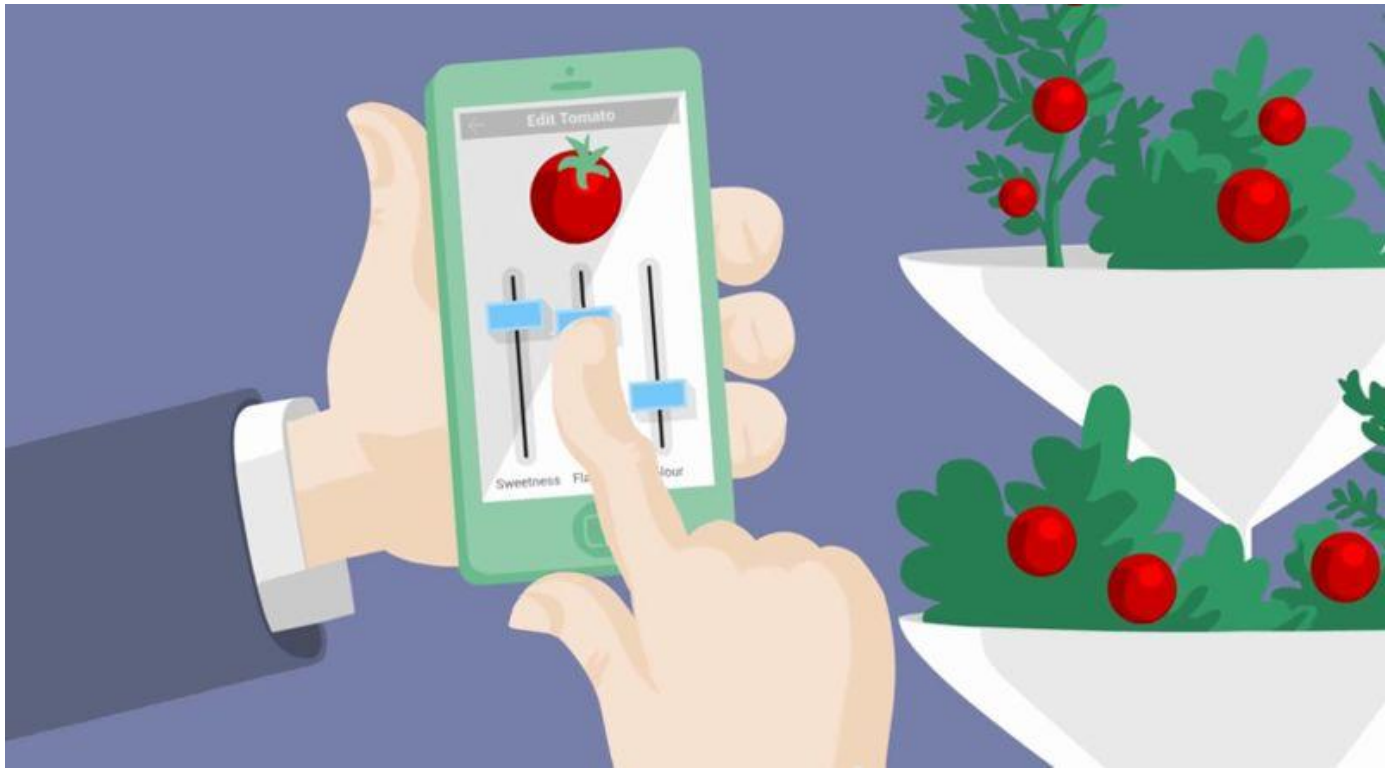
The rapid escalation of food demand due to the growing population worldwide is boosting the demand for smart agriculture.

The smart agriculture engages advanced technologies such as **Big Data**, **GPS, IT** and connected devices.

Smart agriculture helps in automated farming, collection of data from the field and then analyses it so that the farmer can make accurate decision in order to grow high quality crop.

The field data are collected with the help of sensors, cameras, micro controllers, and actuators. Then the collected data are transferred via internet to the operator or the farmer for decision making.

EXAMPLES OF SMART AGRICULTURE



SMART AGRICULTURE

4

SMART AGRICULTURE APPLICATION: THE ISOBUS TECHNOLOGY

What is ISOBUS ?

ISOBUS is a communication protocol for the agricultural industry of machinery

Electronics increase the safety, effectiveness, precision and eficiency of agricultural equipment.
In the past every manufacturer used their own proprietary solution which required special adaptation for every combination of tractor-implement.
ISOBUS will simplify this by offering a **plug and play** solution:
only one terminal for a large selection of implements, regardless of the manufacturer.

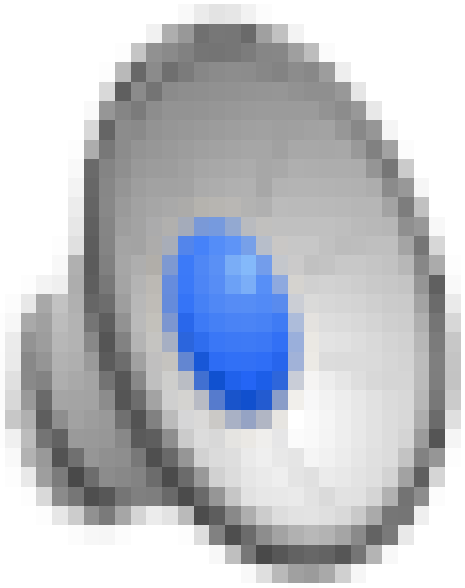
All signals such as speed, position of the lower links, power take-off RPM, etc. are available in standardized form for each implement. The communication between the implement and the farm management system is also standardized and simplified.

The International Agricultural Equipment Manufacturers and Associations established the AEF (Agricultural Industry Electronics Foundation) as a independent international organisaton.
As a user platform it provides resources and knowhow for the increased iuse of electronics and electrical systems in farming.

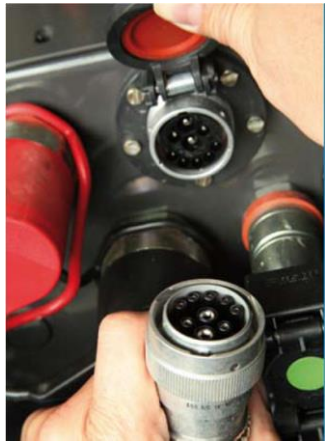
AEF developed the ISOBUS technology

How does ISOBUS work

THE ISOBUS MARK



ACCREDITED LABORATORIES HAVE THE TSK TO PERFORM THE **AEF CONFORMITY TEST** ON PRODUCTS COMING FROM MANUFACTURERS



WITH THE HELP OF THE
AEF CONFORMANCE TEST TOOL
ALL ISOBUS PRODUCTS CAN BE CERTIFIED AND RESULTS PUBLISHED ON THE **AEF DATABASE**

ENAMA IS IN CHARGE WORLDWIDE TO VERIFY AND GIVE ACCREDITATION TO LABORATORIES

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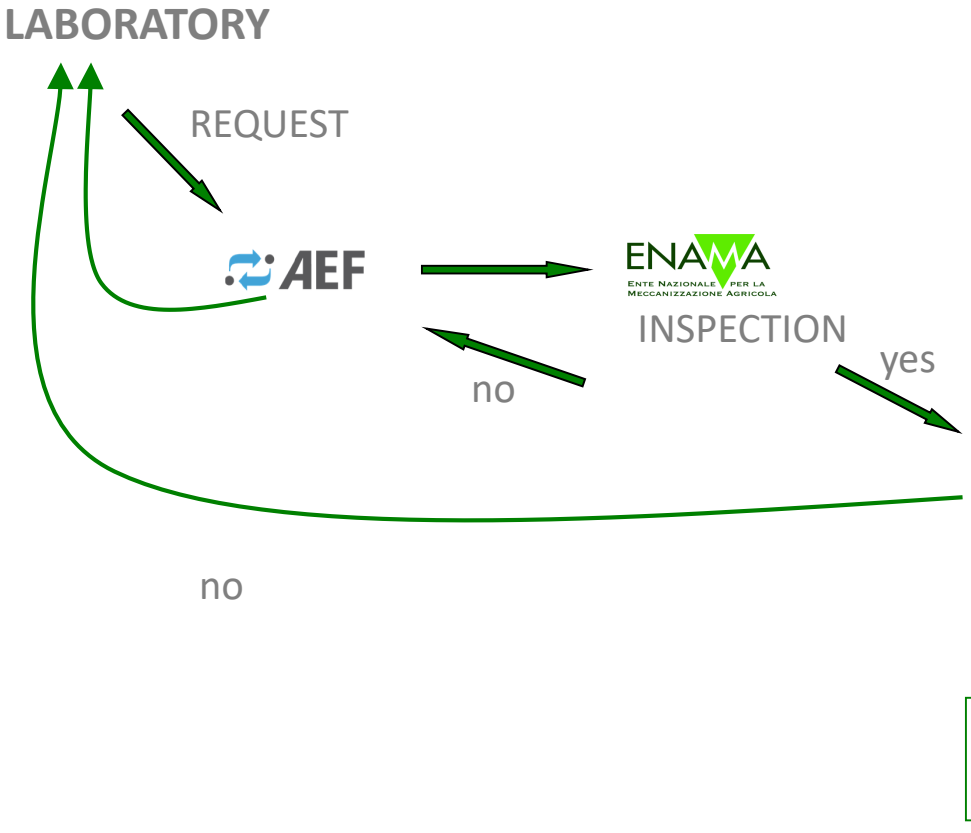
HOW ARE ENAMA AND AEF WORKING TOGETHER



Main documents being adopted:

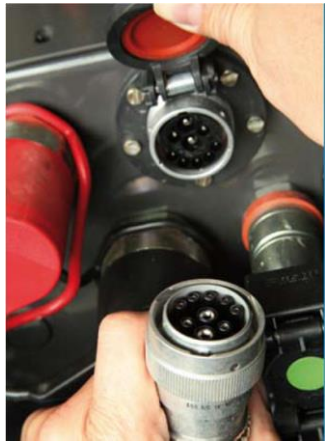
a. **GR 01** **General Regulation for AEF Recognition of ISOBUS Test Laboratories**

b. **SP 00** **Requirements for AEF Recognition of ISOBUS Test Laboratories**

c. **GR 02** **General Regulation for audit of AEF Recognition**

d. **CL 01** **Check List for AEF Recognition of the ISOBUS Test Laboratories**

e. **RG 06** **Regulation for the AEF Deliberative Committee.**



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As a Certification System there are many advantages:

- Reference to a unique scheme;

- Quick identification of roles and responsabilities;

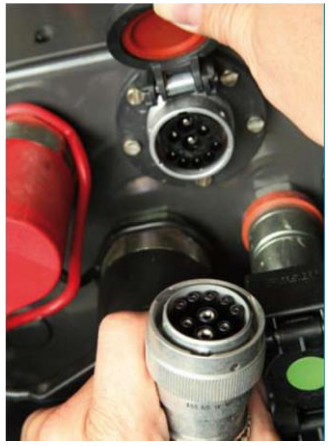
- Well defined procedures;

-Official recognition of the role of laboratories;

- High value of the certificate on the market;

- Protection against a wrong use of the mark;

- Full respect of privacy regulations.



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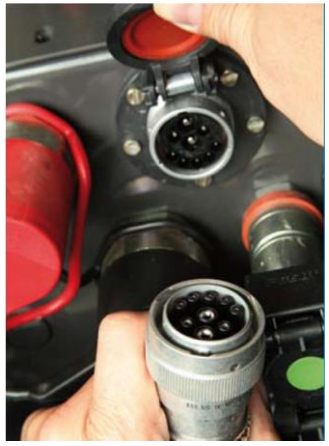
In the future ENAMA will be envolved in the approval process of test reports.



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THANK YOU

www.enama.it