Novel procedure for "remote" verification and certification of repaired/modified pressure equipment

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INAIL
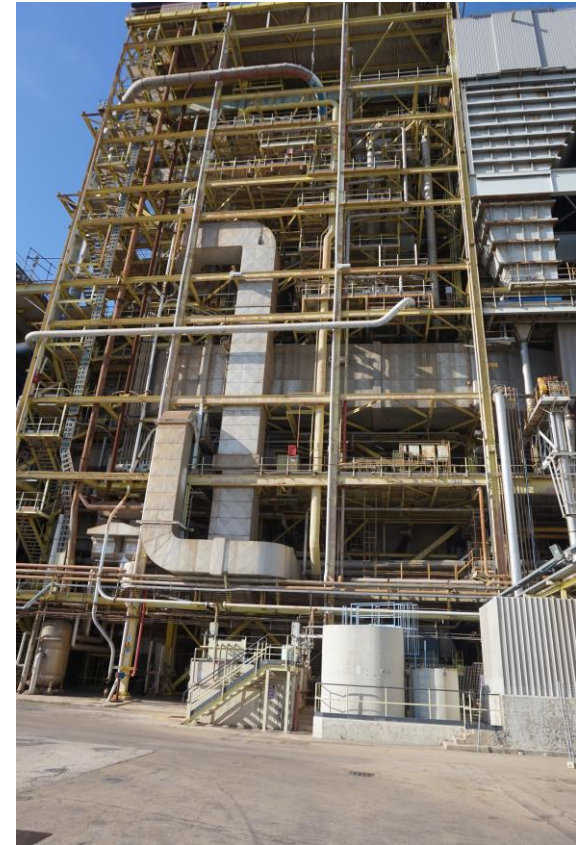Italian National Institute for the Insurance againt Injuries at Work

The duties of the Institute are defined within Italian Legislation for the Prevention of occupational diseases and accidents at work.

They include a number of mandatory inspections, aiming at equipment safety (e.g Pressure equiment, steam generators and lifting machines)

A procedure was developed to do those inspections in a remote way, if required by the plant operator.

Remote inspections allowed just for INAIL technical personnell

Remote Inspections, performed according to the procedure, **have legal value**.

Application field

This procedure applies to the inspections, concerning pressure equipment installed in production sites considered «strategic», as suppliers of essential public services (e.g., healthcare facilities, pharmaceutical facilities, chemical and petrochemical plants, oil refineries, power plants, logistics or production chain activities in the agri-food sector, ...)

The procedure aims to provide the pressure equipment sector with an alternative and equivalent tool for carrying out checks in the presence of the INAIL inspector:
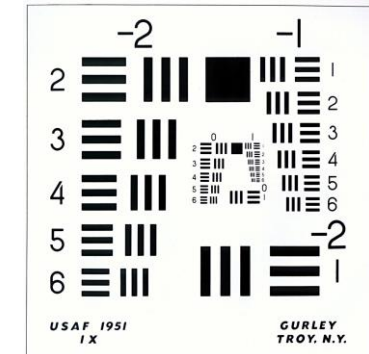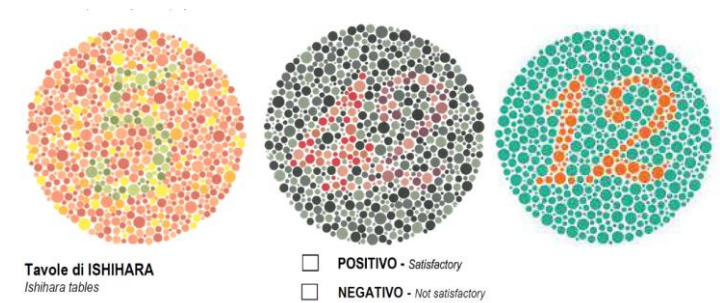
Repair (including prefabrication)   **Commissioning** of new equipment

This procedure provides indications on:

1. the instruments to use

2. the execution of the preparatory operations for verification,

3. the verification

4. the verbalization of the verification,

5. The recording and archiving of the produced documents.

- ✓ an operator (**operator1**) of the manufacturer / repairer / user company with knowledge of the processes and equipment subject to verification (e.g. welding coordinator, quality control officer, qualified NDT operator ...) as well as of basic ITC devices;
- ✓ a second operator (**operator2**) of the manufacturer / repairer / user company who carries out the activities functional to the inspection, according to the requirements of inspectors;
- ✓ an audio-video streaming connection between operator1 and inspector: the inspector will remotely direct and control operations and actions of operator1 and operator2;
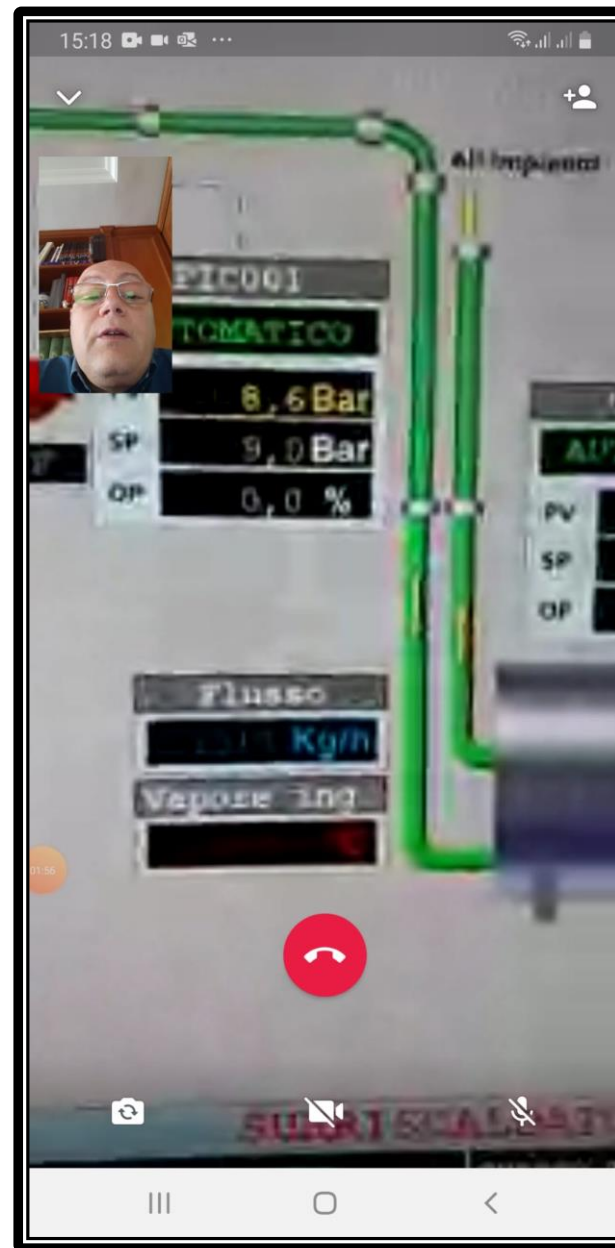
d) a device with a camera (Tele1) capable of transmitting images / videos via a remote platform (for example Microsoft Teams, Zoom, Whatsapp, Skype, Jitsi ...) from which the verifier can receive, record and interact with the operators;
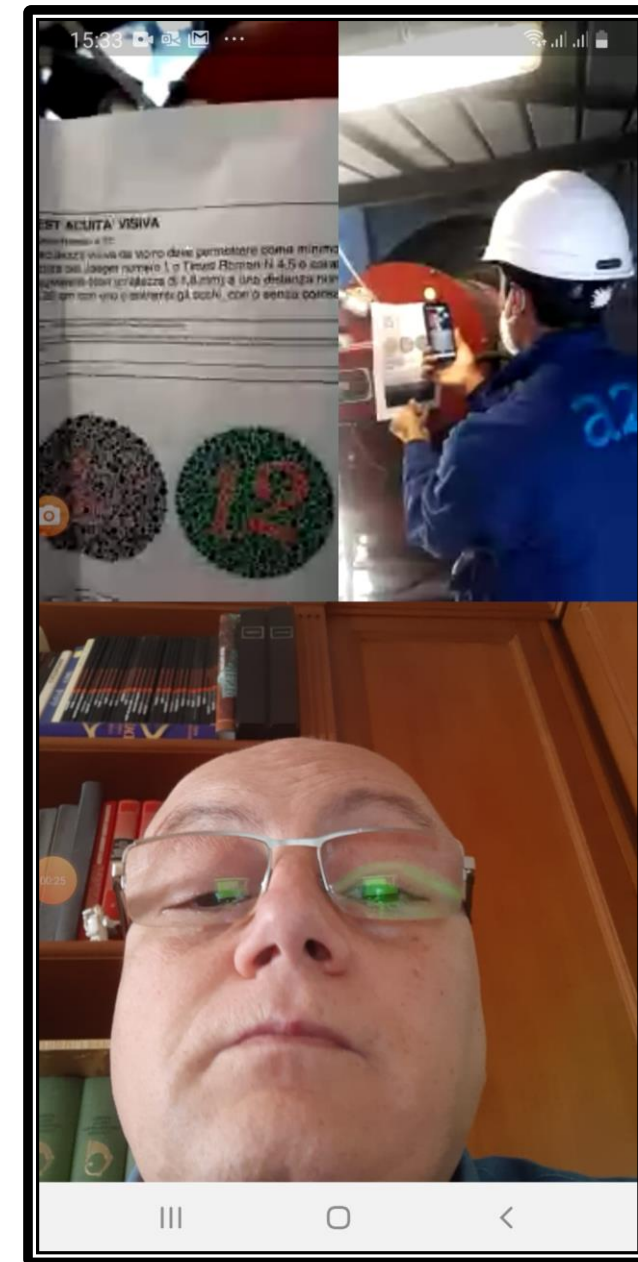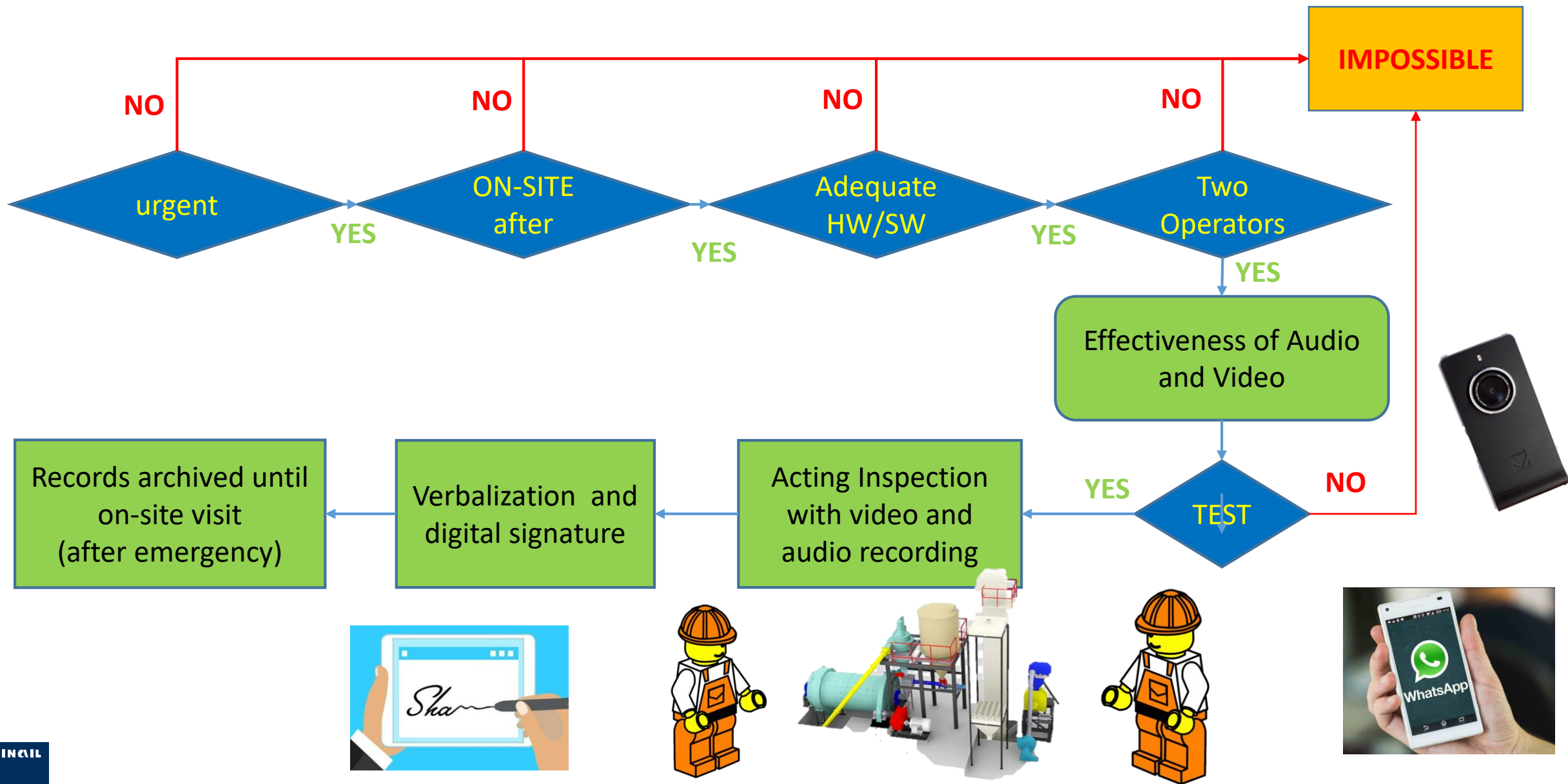
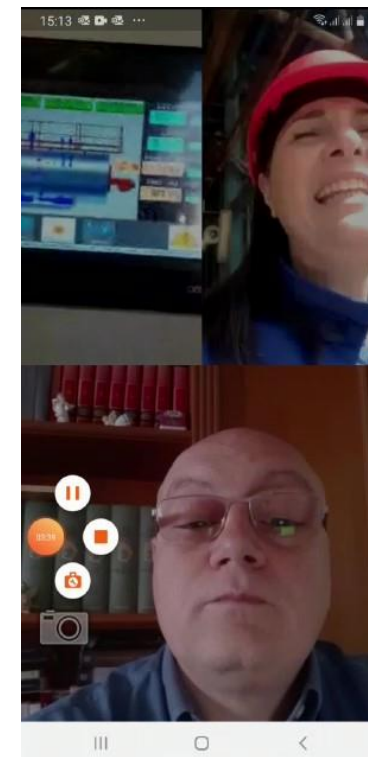e) efficient data transmission (e.g. 4G, Hot Spot, Wi-Fi …)
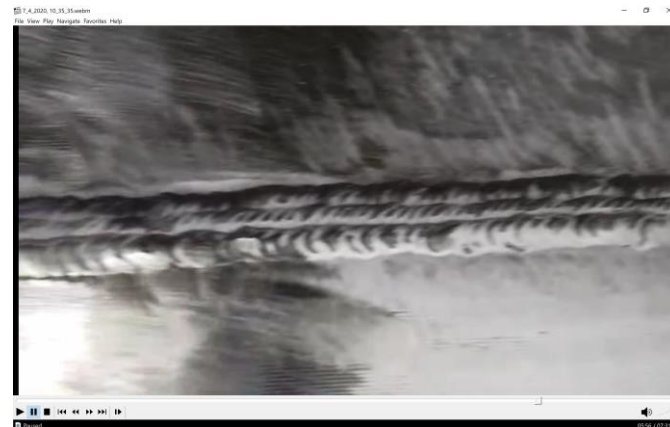
both on the operator1 side and on the inspector side. *

f) an additional lamp adquate to illuminate - if required - the framed image;

g) at the request of the inspector, an additional device with camera (Tele2) for wide field shots that can transmit to the inspector the resumption of the activities carried out by operator1 and operator2.

IMPOSSIBLE

urgent — NO / YES
ON-SITE after — NO / YES
Adequate HW/SW — NO / YES
Two Operators — NO / YES

Effectiveness of Audio and Video

TEST — YES / NO

Acting Inspection with video and audio recording

Verbalization and digital signature

Records archived until on-site visit (after emergency)

Screenshots from a whatsapp movie
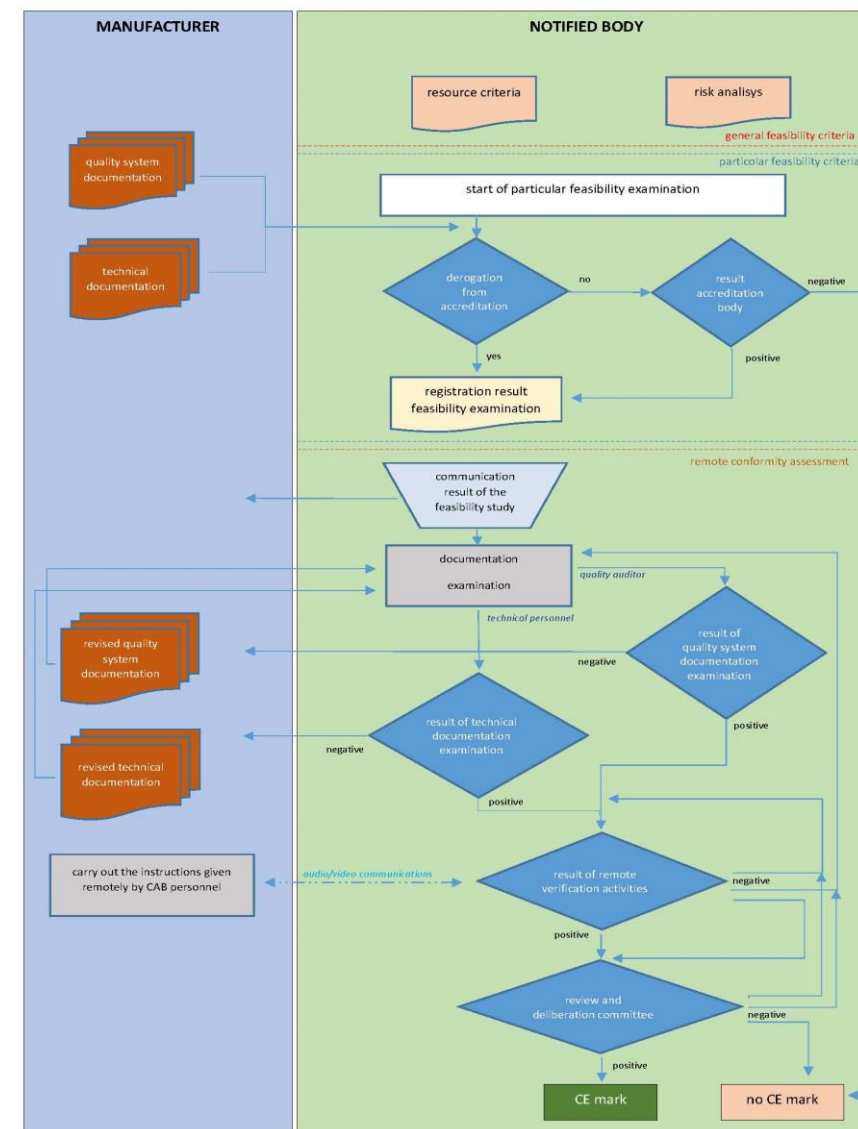*Steam generator*

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Screenshots from video-camera
Pressure vessel repair

…until April 28ᵗʰ INAIL has done 80 inspections using the "remote" procedure, but that is not all …….

….. there are further issues

PED certification

Directive EU/2014/68

Directive EU/2010/35

…. after the Covid crisis

application of the procedure for

equipment in remote areas,

harsh environments, confined

spaces.

Augmented Reality (Head-Up

Display) SPACE1 – Reaview

Thank you for your attention!