1. INTRODUCTION
The JRC – ISPRA personal thermoluminescent dosimetry (TLD) system was tested according to the requirements of International Standard IEC 61066:2006 to evaluate the quality of the dosimetry system. The Standard is a revision of the first edition published in 1991. The main technical changes include: (a) to specify the use of operational quantities, (b) to harmonise the reference radiation and calibration with ISO Standards, (c) to integrate the basic uncertainty analysis, and (d) to align IEC uncertainty requirements on dosimetry system with those stated in ICRP Publication 75 "General Principles for the Radiation Protection of Workers”.

2. OBJECTIVES
International Standard IEC 61066:2006 applies to thermoluminescence dosimetry systems used for measuring the personal and ambient dose equivalents Hp(10), Hp(0,07), and H*(10) for external photon or beta radiation within the dose range from 0,01 mSv to 10 Sv. The aim of the study was carrying out several type tests that are listed in the Standard for whole body dosemeters.

3. METHODS
The JRC-ISPRA Dosimetry System is composed of a transparent plastic outer casing with a Panasonic TLD badge (UD-802A series), a Panasonic UD-716 AGL automatic reader, a computer with appropriate software and algorithm. Two type test categories were performed: (a) radiation performance requirements and tests on the dosimetry system, (b) additivity of the indicated value on the dosimetry system. The category (a) is divided into four tests, namely: (1) coefficient of variation (2) non-linearity response, (3) angular and (4) energy response. For these tests the range was extended, both in terms of linearity (from 0,05 mSv to 1 Sv instead of 0,1 mSv to 1 Sv as requested by the Standard) and in terms of angles of incidence (± 80 degrees instead of ± 60 degrees as requested by the Standard). For category (b) the dosemeters were exposed to different angles of the incident radiation (from 0 to ± 60 degrees). Moreover, for each angle of incidence we simultaneously irradiated the dosemeters with different energy radiations.

4. RESULTS

5. CONCLUSIONS
This study confirmed the overall excellent quality of the JRC-ISPRA TLD system, which now also implementing basic uncertainty analysis, is hence ensuring a strict metrological traceability to personal dose equivalents Hp(10) and Hp(0,07), according to international Standards.