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A new standard for using official animal identification schemes (AIN) for bovine animals in RFID applications worldwide

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The paper gives the concept of the ISO new work item NWI 23636. The basic principles are the following:

Official Animal Identification Schemes, which are presently in use shall be applied in future to RFID based systems. The aim is to avoid the introduction of an extra “electronic number”. This requires, that the animal numbers allocated on a national basis have to be converted into an Animal Identification Number (AIN) that is unique worldwide. It is achieved by adding a “header” to the visible number on the eartag. It contains the ISO 3166 country code and a key for the National Encoding Scheme

(NES). The Animal Identification Number, is a worldwide unique number, that will be used for all kind of data processing –including IoT. However it contains as nucleus the number the farmer is familiar with.

The second part describes how the Animal Identification Number is stored in the memory of an ISO 18000-63 (UHF) transponder. For economic reasons a 128 bit memory was selected. To characterize the transponder, which are used for animal identification an “Application Family Identifier” is introduced. The AIN is encoded in numeric and alphanumeric characters.

In the third part the Quality aspects of the UHF technology are discussed and test procedures described. Precondition for the introduction of a new technology is that it can demonstrate the same reliability as of existing LF installations. The proposed test procedures include the ICAR procedures for conventional plastic ear tags as well as special electrical tests taking into account the detuning of the transponder antenna circuit by the tissue of an ear, when the eartag is fixed to a bovine animal. Keywords: official animal identification schemes, animal identification, RFID, UHF, ISO 18000-63