A158 Accredition of a Forensic Case Work Method Using Laser Ablation ICP-MS for the Examination of Glass According DIN EN ISO/IEC 1705 and Implementation of Interpretation and Reporting According DIN EN ISO/IEC 17020

Stefan Becker, Dr., Bundeskriminalamt, Forensic Science Institute, KT 13 Bundeskriminalamt, Thaer Strasse 11, Wiesbaden, 65173, GERMANY*

After attending this presentation, attendees will have an inside view of a particular German approach to ensure a certain level of transparency and quality in reporting trace evidence cases.

This presentation will impact the forensic community by presenting new trends in the accreditation process in Europe/Germany.

Introduction of a routine forensic case work LA-ICP-MS method for the examination of glass according DIN EN ISO/IEC 17025 and implementation of interpretation and reporting of case work according DIN EN ISO/IEC 17020

With the beginning of the 1990ies, first quality management activities in the field of European forensic science services were started. Several European forensic science institutes received accreditation (e.g., Great Britain, Sweden, and the Netherlands).

On a European level ENFSI (European Network of Forensic Science Institutes) requests that all member laboratories should have achieved or should be taking steps towards ISO/IEC 17025 compliant accreditation for their laboratory testing activities.[1] .

Due to these external circumstances the direction of BKA decided that accreditation of the forensic science institute was favourable. Based on a decision made in 2003 accreditation of the forensic science institute according ISO/IEC 17025 “General requirements for the competence of testing and calibration laboratories” was put forward. In 2006 the first 6 out of 20 units of the forensic science institute were accredited according to the norm DIN EN ISO/IEC 17025.

In September 2007 the inorganic material analysis section (KT 13) of the Bundeskriminalamt /Germany received accreditation (ISO/IEC 17025:2005) for methods in the field of glass and paint examination including the operation of the European Collection of Automotive Paints (EUCAP). In the field of glass analysis the main methods involved were the determination of refractive index and the elemental quantification of glass fragments applying laser ablation inductively plasma mass spectrometry (LA-ICP-MS).

Late 2007 it was decided that all units of the Forensic Science Institute of the Bundeskriminalamt that already achieved accreditation according DIN EN ISO/IEC 17025:2005 should additionally undergo accreditation according DIN EN ISO/IEC 17020:2004 “General criteria for the operation of various types of bodies performing inspection”. This should be achieved until October 2008. By this step the complete forensic process including case work reporting should be covered by the so called integrated quality management system.

Further activities of KT 13 lead to a successful accreditation audit of the entire process of interpretation and reporting of glass case work according DIN EN ISO/IEC 17020 in October 2008. Accreditation is expected to be received at the end of this year.

The different phases of the accreditation processes - testing of the analytical methods, method validation, and application of a conclusion scale - will be presented.

The validation and the definition of match criteria for the comparison of quantitative results by LA-ICP-MS analysis of glasses based on the statistical evaluation of type I and type II errors is described briefly.

The conclusion scale based on five levels of material association types is described. The application of this type of conclusion scale for the use in paint case work reporting has already been presented previously.[2] The material specific application (glass/paint) will be highlighted in the presentation. Glass case work examples will be given.

References:

1 ENFSI policy document QCC-ACR-001 “Standards for accreditation” 2007

2 Bommarito C. oral presentation at SWGMAT meeting May 2008, Fredericksburg/VA

LA-ICP-MS, Accreditation, Glass

 ** Presenting Author*