



# A World Heritage created by surveyors?

## An initiative supported by CLGE!

**A group of Austrian surveyors, representing professionals from private and public practice and from academic institutions, has launched an initiative to prepare an application to have “The Network of Boundaries of Land Property and the Boundary Marks” listed as a UNESCO World Heritage Property. Gathered in Edinburgh, the CLGE General Assembly has strongly supported this initiative. Many national delegations have mentioned their interest in cooperating.**

*By G. Schennach and OVG WG Grenzstein<sup>1</sup>, Austria*

The history of boundaries and boundary marks dates back several thousand years. Boundary marks have been recognised since the Babylonian period (3rd millennium B.C.). Their importance has even been documented in the Old Testament: Cursed be he that removeth his neighbour's landmark [Deuteronomy - 5th Book of Moses 27, 17; around 16th century B.C.].

*A boundary mark dated 1676 (Photo by H. Koenig)*



During the Roman Empire the term *Terminus* was used as the name of the God who presided over boundary marks as well as for the boundary marks themselves (from 7th century B.C.).

Superstition, rituals and traditions were, and still are, associated with boundaries and boundary marks.

Nowadays, most countries are covered by a network of boundaries, delimiting properties and administrative entities. This dynamic network is closely linked to particular legal frameworks and is dependent on the definition of ownership rights. Both build upon different requirements of society in different countries.

Boundaries and boundary marks define the territorial extent of land rights and the restrictions on land for individuals and/or legal persons. The network of boundaries can be seen to be of significant importance for the respectful and peaceful co-existence of neighbours, for the protection of land ownership, for the economic benefit of land owners and those holding rights in land and furthermore it can be seen to be of benefit to the whole of society. It is a valuable tool for the valuation of land, for administering land related taxation, as well as for calculating subsidies. Boundaries, therefore, are more than spatial separation lines; they define legal, cultural, social, economic and ethical entities. They may be considered as the major part of land administration. Thus:

### Boundaries & Boundary Marks

- are a demarcation for land, which is a limited resource
- underline the importance of a sustainable protection of property

- provide an important contribution to the peaceful coexistence of neighbours
- raise awareness among citizens of land management
- are a crucial guarantee for the future of our society
- act as a vehicle to promote surveying and geoinformation and their stakeholders
- provide an example of international and interdisciplinary cooperation

Boundaries and boundary marks, as well as cadastre and land books, which comprise the instruments with which to register them, have developed from the exceptional idea of making the delimitation of rights and obligations in land visible. These boundaries and rights are documented and archived by legally empowered authorities and are generally based on negotiations among neighbours, agreed contracts, demarcation on the spot and mapping. The mapping of details of the boundary network requires a higher order, high precision triangulation network.

The extraordinary, high level- scientific, nature of a land administration system has been built upon a scientific process involving geometry, mathematics, geodesy, astronomy, optics and mechanics, as well as communication and logistics, which are being continuously improved.

From the earliest times land surveyors have been the main profession responsible for negotiating rights and obligations linked to land among land owners and stakeholders. They also act as mediators between parties and are called upon for referencing boundaries to the neighbouring surroundings. Moreover, preparing high quality documentation regarding the outcomes of nego-

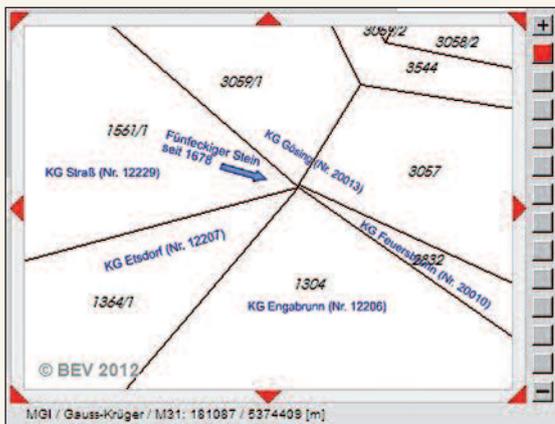


Figure 2: Delineation of this extraordinary boundary mark in the Digital Cadastral Map. 6 parcels, 5 cadastral units, 4 municipalities, 2 administrative districts and 2 federal provinces are linked to this mark (Source: Federal Office of Metrology and Surveying BEV, Austria).

tiations and measurement has been one of the main duties of surveyors, either in private practice or in public service.

Who other than these high level professionals are better positioned to take the initiative to get this work acknowledged as a UNESCO World Heritage Property?

Boundaries and boundary marks, including cadastre and land registry, high precision networks of triangulation points (network of national triangulation and recently satellite tracking systems) together with a reliable legal framework represent the key aspects of this project. This network of boundaries also includes a large number of historically and artistically valuable boundary marks, which are still in use. Some of these monuments will represent the physical core of this world heritage project.

At the ICOMOS Advisory Committee Meeting 2004 in Bergen the document "The World Heritage List: Filling the Gaps - an Action Plan for the Future" was presented and adopted. It requested the inclusion of technical achievements and technical infrastructure into the World

Heritage List. For example the Struve Geodetic Arc was listed in 2005 as an outstanding technical and intellectual human achievement.

The network of boundaries of real property, its representation by visible boundary marks, as well as by documents in cadastre and on the land register and their measurement by the highly sophisticated art of geodetic surveying, must be recognised as an extraordinarily technical and intellectual human achievement.

The Operational Guidelines of UNESCO define six criteria as relevant for inclusion in the World Heritage List. Boundaries and boundary marks, as the core part of a geodetic and legal system, fulfil all of these criteria at least in part. In the nomination file, their outstanding universal value will be defined under the most important criteria **(ii)**, **(iv)** and **(vi)**.

- A masterpiece of human creative genius: Ignoring the relevance, or failing to appreciate the importance of good boundary demarcation, has led throughout history to disputes and, on occasions, even war. The implementation of boundary marks, verified by neigh-

bours, as a means of visualising boundaries, was an extraordinary step in exactly defining and documenting land property within boundaries acceptable to neighbouring owners.

- **(ii)** Important interchange of human values: Well defined boundaries within a well functioning land administration system guarantee the exchange of human values with respect to social and economic development and the cultivation of landscape.
- A unique or at least exceptional testimony to a cultural tradition: Boundaries and boundary marks are remarkable testimonies of a tradition which has grown over millennia.
- **(iv)** An outstanding example of a type of ... technological ensemble ... which illustrates (a) significant stage(s) in human history: Implementation and maintenance of a nationwide network of agreed boundaries is an outstanding technical and legal achievement, which continuously adapts to changing ownership and to other changing requirements of human society.
- An outstanding example of land-use which is representative of human interaction with the environment: Land administration systems are fundamental to the sustainable use and development of land and other natural resources. They are indispensable instruments for the protection of the environment against damage from human interaction. Cultivation of land and environmental care could not be managed and organised without being geo-referenced to clearly defined land parcels.
- **(vi)** Be directly or tangibly associated with living traditions and with artistic works of outstanding universal significance: Boundaries and boundary marks are living testimonies of social, economic, legal, administrative and technical innovation, as well as of consistency and trust. Also many traditions and rituals are closely linked to boundaries and boundary marks.

Authenticity and integrity, which are indispensable characteristics of a World Heritage Property, can be readily established in the case of boundaries and boundary marks.

UNESCO also requires the presentation of a management plan, which can guarantee the sustainable protection of the cultural heritage, which is the subject of the application. In the case of boundaries and boundary marks this requirement is already fulfilled by a multiplicity of legal and technical regulations for securing their continued existence and adaptation as required.

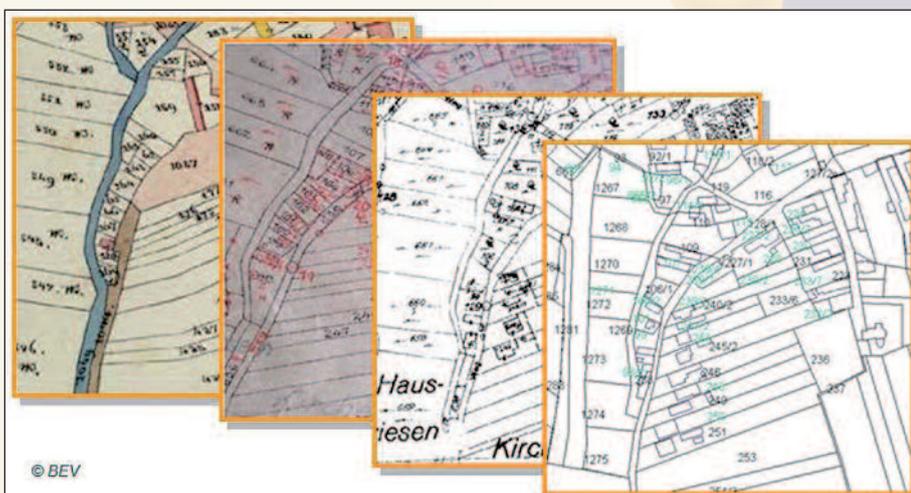


Figure 3: Austrian Cadastral Map (details from different dates). Source: Federal Office of Metrology and Surveying BEV



### What are the benefits to be drawn from an application?

- Supporting the UNESCO ideal of social and international peace in the world
- Raising awareness of boundaries and boundary marks in society
- Promoting sustainable land administration
- Creating a model for countries where such institutions are missing or insufficient
- Increasing ethical behaviour among the professionals and institutions in charge of land administration
- Fostering international and interdisciplinary co-operation

Austria has already taken the first steps in making the application to UNESCO. The project is open to any other country to join now or at a later stage. The application will contain all facts of international significance, such as history, description of land administration systems, definition of terms and a bibliography. The relevance of boundaries and boundary marks, as an outstanding human-technical achievement of extraordinary universal value, has to be justified, so as to fulfil the criteria of UNESCO for being accepted for the World Heritage List. In a second part of the application the focus will be on the specific items related to Austria. Countries

joining at a later stage may refer to the first part and use the second part as a model for presenting their own system in their own application.

### <sup>1</sup> Members of the Working Group Grenzstein in the Austrian Society for Surveying and Geoinformation (OVG)

Günther Abart, Klaus Hanke, Michael Hiermaseder, Heinz König, Reinfried Mansberger, Gerhard Navratil, Gerda Schennach, Christoph Twaroch, Peter Waldhäusl.

Contact for further information:

Prof. Peter Waldhäusl, [pw@pf.tuwien.ac.at](mailto:pw@pf.tuwien.ac.at)  
Gerda Schennach, [gerda.schennach@bev.gv.at](mailto:gerda.schennach@bev.gv.at)

## European Young Surveyors together for tomorrow's challenges

17-18 October 2013, Lisbon, Portugal

**A large number of participants were inspired and many new friends were made!**

*By Eva-Maria Unger - Austrian Society for Surveying and Geoinformation (OVG) and Paula Dijkstra - Kadaster, the Netherlands*

The first FIG Young Surveyors European Meeting was held in Lisbon, Portugal from 17th to 18th October 2013. Around 150 young surveyors from 32 countries gathered together to work towards a European Network of Young Surveyors.

During the 2 days the mornings focused on keynote speeches. Later in the day the Young Surveyors were invited to join forces and work together towards a European vision for the Network. The young surveyors took over their role in shaping their future by sharing their thoughts and ideas on ongoing and future projects. It was a great opportunity for the young surveyors to learn more about FIG and CLGE.

This meeting was an opportunity to introduce new presentation styles. This created a dynamic environment and challenged the presenters. For many of them it was the first time they had given presentations in English in front of such a large number (over 150) of participants. With FIG and CLGE being major initiators in establishing the European Network and participating in the meeting themselves, the Young Surveyors were made aware of the importance of being involved with their national associations. Showing the benefits of being involved and active within the national associations inspired some Young Surveyors so much that they couldn't wait to get back to their home countries and start establishing a Young Surveyors Network. All the participants and organizers are keen to take the next steps and work together for the Network.

The event was organized by the Ordem dos Engenheiros (OE) and the FIG Young Surveyors Network represented by Eva-Maria Unger (Austria) and Paula Dijkstra (the Netherlands). Of course this event wouldn't have been possible without all the help and support of the sponsors, participants, trainers and keynote speakers

