

Title (en)

METHOD FOR DETERMINING THE POSITION AND ORIENTATION OF A MEASURING OR REPAIRING DEVICE AND AN APPARATUS OPERATING ON THE BASIS OF THE METHOD

Title (de)

VERFAHREN ZUR ERMITTLUNG DER POSITION UND ORIENTIERUNG EINER MESS- ODER REPARATUREINRICHTUNG UND EINE NACH DEM VERFAHREN ARBEITENDE VORRICHTUNG

Title (fr)

PROCEDE DE DETERMINATION DE LA POSITION ET DE L'ORIENTATION D'UN DISPOSITIF DE MESURE OU DE REPARATION ET DISPOSITIF FONCTIONNANT SELON LE PROCEDE

Publication

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Application

EP 07723074 A 20070307

Priority

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Abstract (en)

[origin: WO2007107242A1] Method for determining the wall thickness or the wear of the lining of a metallurgical melting vessel with a scanner system for contactlessly sensing the lining surface with determination of the position and orientation of the scanner system and assignment to the position of the melting vessel by the sensing of spatially fixed reference points, characterized by the following method steps: 1. establishing a system of spatial coordinates as a reference system (for example perpendicular three-dimensional Euclidean coordinate system) by means of at least two fixed measuring points, 2. definition of the at least two spatially fixed reference points in the reference system and measuring of these reference points by known geodetic methods, 3. measuring the coordinates of at least two points of the tilting axis or axis of rotation of the metallurgical vessel concerned in the reference system by known geodetic methods, 4. definition of a grid system on the development of the theoretical inner surface of the vessel shell, 5. scanning of the spatially fixed reference points with a three-dimensional scanner (radiation-emitting and receiving measuring device), 6. determination of the scanner position in the reference system, 7. prior, simultaneous or subsequent scanning of the inner wall of the metallurgical vessel in the same scanner position as in the scanning of the spatially fixed reference points, 8. sensing of the tilting angle of the melting vessel, 9. calculation of the coordinates of each scan point of the inner surface of the lining in the reference system and allocation of the scan point to a grid element in the grid system defined in step 4., 10. determination for each grid element of a wall thickness or the wear of the lining using the coordinates of the assigned scan points and coordinates of freely selectable reference data, 11. representation of the determined wall thickness or the wear in the grid system.

IPC 8 full level

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CPC (source: EP US)

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