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Augmented in Vascular Interventional Neuroradiology? -- Endoscopic Image Overlay for the Targeting of Hidden Anatomy in Laparoscopic Visceral Surgery -- Modeling of Radiofrequency Ablation Lesions for Image-Guided Arrhythmia Therapy: A Preliminary ex vivo Demonstration -- Visualization of Organ Motion during Breathing from 4D Datasets -- The Colored X-Rays -- Use of a Mixed-Reality System to Improve the Planning of Brain Tumour Resections: Preliminary Results -- Development of New Augmented Reality Function Using Intraperitoneal Multi-view Camera -- Hand-Held Force Magnifier for Surgical Instruments: Evolution toward a Clinical Device -- A Simulator for Designing Control Schemes for a Teleoperated Flexible Robotic System -- Traceable Particle Swarm Optimization for Electromagnetically Navigated Bronchoscopy -- Augmented 3-D View for Laparoscopy Surgery -- Generation of Synthetic 4D Cardiac CT Images by Deformation from Cardiac Ultrasound -- Interactive OCT Annotation and Visualization for Vitreoretinal Surgery -- Real-Time Feature Matching for the Accurate Recovery of Augmented-Reality Display in Laparoscopic Videos -- Automated Detection of Mediastinal Lymph Nodes for Assistance of Transbronchial Needle Aspiration.

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### Sommario/riassunto

This book constitutes the refereed proceedings of the International Workshop on Augmented Environments for Computer-Assisted Interventions, held in conjunction with MICCAI 2012, in Nice, France in September 2012. The 16 revised full papers presented were carefully reviewed and selected from 22 submissions. The papers cover the topics of image registration and fusion, calibration, visualization and 3D perception, hardware and optical design, real-time implementation, as well as validation, clinical applications, and clinical evaluation.

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