Appendix

**Fig. 1** Example of reading software with multidimensional image visualization capabilities (OsiriX software): volume rendering, virtual endoscopy, multiplanar reconstruction. See Appendix for color version of the picture
Fig. 2 3D display of 3 imaging modalities for a patient in epilepsy surgery. The brain was segmented from anatomical MR images. The colored texture was computed from registered periictal SPECT. The grey dots show auditory activations computed from MEG. See Appendix for color version of the picture.

Fig. 3 Left: 3D structures segmented from multimodal images of the same patient for surgical planning. The sulci are segmented from MRI. The cavernoma is also segmented from MRI. The spheres are computed from registered functional MRI and MEG. Both functional information shows somato-sensory and motor areas. Right: these 3D preoperative 3D multimodal structures are displayed in the surgical microscope during the surgical procedure as 2D overlays. See Appendix for color version of the picture.
Fig. 4 Compared to Fig. 5, MR and SPECT imaging modalities are reformatted in the same coordinate system. The SPECT volume is then used to add color to MR-based objects. See Appendix for color version of the picture.

Fig. 5 Whole body multimodality imaging with discrete modalities. From left to right: 3D renderings of MR (T1 weighed), PET, MR (IR) and CT, the last two combined with PET. This figure also is an example of how simple variations in the acquisition protocols (here, arms lowered for MR and CT, arms raised for PET) can make the registration task much more complex. See Appendix for color version of the picture.
Fig. 6 Multimodality can also be performed with animal imaging. From left to right: 3D projection of CT with PET uptakes, whole body PET projections A and B, skeletal PET uptake and bioluminescence imaging for comparison (please note the corresponding signal in the right shoulder on all data sets). See Appendix for color version of the picture.

Fig. 7 The Large Magellanic Cloud in the X-ray range observed by the XMM EPIC. See Appendix I for color version of the picture.