On the other hand, having so stabilized the algorithm, A tends to become lower and lower as refinement factor increases.
Having verified the feasibility of the method for a spherical canonical target, a study of practical interest such as that of a subject exposed in the near field of a base-transceiver antenna, was conducted. Two refined domains were used both embedded into a coarser one. The first allows an accurate description of the antenna electrical structure while the second one, containing the body model, permits to fulfill the FDTD accuracy constraints for high permittivity media.
Results show the suitableness of this new subgridding algorithm for dosimetric problems.

References
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P-C-54 STUDENT

ASSESSMENT OF THE SAR FOR A WALKIE-TALKIE SETUP. G. Vermeeren, L. Martens. Dept of Information Technology, Ghent Univ.

INTRODUCTION: The successful reintroduction of the walkie-talkie demands an evaluation of the SAR in front of the face. The digital walkie-talkie standard is known as PMR446. PMR446 stands for Private Mobile Radio operating at a frequency of 446 MHz and radiating at maximum 500 mW ERP.

OBJECTIVE: Assessment of the local averaged SAR in 1 g and 10 g of human body tissue produced by a generic walkie-talkie. The SAR in three homogenous and one heterogeneous phantom will be examined for a typical operating position of the walkie-talkie.

METHOD: A simulation model has been developed for the walkie-talkie: a helical antenna mounted on a ground plane. The model has been simulated in free space using SEMCAD as well as FEKO. Free-space measurements in an anechoic chamber have been carried out to validate the free-space model. The validated model has been placed in the proximity of several human body phantoms. *Table 1* tabulates the investigated setups. Where possible, the simulation setups have been verified with measurements. The influence of the distance d between phantom and device has been examined. The flat phantom setup has the advantage of an easy positioning of a portable device in front of it and, thus, an easy to reproduce SAR measurement. Therefore, it is interesting to investigate how the flat phantom setup behaves in comparison with the more realistic setups.

RESULTS: *Figure 1* shows the simulation results of the walkie-talkie in front of three different phantoms. We see that the 10 g averaged SAR: (1) decreases with distance d between phantom and device, (2) achieves its highest value in the flat phantom setup, (3) is conservative in the homogenous phantoms compared with the heterogeneous Visible Human. The SAR distribution in a vertical cut of the homogenous and heterogeneous Visible Human phantom is drawn in *Figure 2*. The measurement results for this walkie-talkie case will be reported at the conference.

CONCLUSION: A popular portable device, i.e. a generic walkie-talkie, has been examined in terms of the local averaged SAR it originates in a human body. The model of the device as well as the setups to assess the SAR have been validated with measurements. The homogeneous phantoms showed a conservative local averaged SAR compared with the heterogeneous Visible Human.

ACKNOWLEDGMENT: This research within the framework of the European Eureka project SARSYS-BWP is supported by the *Belgian Federal Science Policy Office*.

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[1] CENELEC EN50361, "Basic Standard for the measurement of Specific Absorption Rate related to human exposure to electromagnetic fields from mobile phones (300 MHz –; 3 GHz)", 2001.
[2] IEC TC106/61/CDV,"Procedure to measure the Specific Absorption Rate (SAR) in the frequency range of 300 MHz to 3 GHz –; Part 1: hand-held mobile wireless communication devices, 2004.

Device	Simulation setup < /td>
Walkie-talkie	Free space
	Flat phantom
	SAM head phantom
	Homogenous Visible Human
	Heterogeneous Visible Human
Table 1: Overview of the examined setups for SAR assessment.	

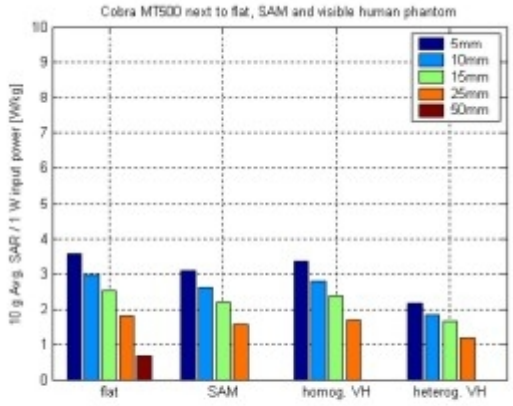

Figure 1: Assessment of the 10 g Averaged SAR caused by a walkie-talkie radiating in the proximity of a flat, the SAM head and the Visible human head phantom.

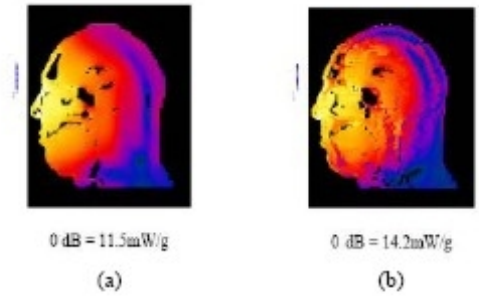

Figure 2: The SAR distribution in a vertical cut of the (a) homogenous and (b) heterogeneous Visible Human head caused by a walkie-talkie.

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