BETI-methods for Maxwell equations

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In this talk we want to present basic ideas for a Tearing and Interconnecting approach for electromagnetic scattering, using boundary integral equations on the local subdomains. The Tearing and Interconnecting approach is normally used for partial differential equations which lead to elliptic bilinear forms. Nevertheless, C. Farhat introduced the FETI also for the Helmholtz equation (using FEM instead of BEM on the local subdomains), now called FETI-H. In former talks we presented a numerical analysis to use this method with boundary instead of finite elements. In this talk now we describe ideas, how this approach can be used for the even more complicated electromagnetic scattering problem. Instead of standard transmission boundary conditions of Dirichlet and Neumann type we may use Robin type interface conditions, which result in a stable formulation which is robust to possible spurious modes.