

## ***Interactive comment on “A joint thermal and electromagnetic diagnostics approach for the inspection of thick walls” by Nicolas Le Touz et al.***

### **Anonymous Referee #1**

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The paper shows that the thermal reconstruction can be improved making use of some geometrical constraint gained by previous GPR measurements and Born-based inversion. The method is back-upped with numerical simulation regarding a wooden (or air or steel) object embedded in a wall. The paper is of interest, even if experimental data would have been better. The set-up is not expensive and I hope that in a future work the authors will implement it. As for the paper at hand, it should be corrected from some refuses (see the attached file) and some notes that the authors wrote for themselves and should have erased before submitting the paper. Moreover, the theoretical dealing could be reduced because both the equation of the thermal and GPR sensing are well assessed and known. Still, about the thermal investigations, it should be specified whether some lamp is used in order to enhance the emission or purely passive data are used. In any case, it should be specified how in a real case,

C1

the same environmental condition would be guaranteed for 5 days, or alternatively how an equivalent amount of independent data could be gathered in a shorter time. The reference Persico and Bernini 2005 is badly reported. Indeed the authors are Persico, Bernini and Soldovieri.

Please also note the supplement to this comment:

<http://www.geosci-instrum-method-data-syst-discuss.net/gi-2016-32/gi-2016-32-RC1-supplement.pdf>

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Interactive comment on Geosci. Instrum. Method. Data Syst. Discuss., doi:10.5194/gi-2016-32, 2016.

C2