Description of the Extended Version.

The paper entitled “Bandwidth Limits in Hall Effect-based Current Sensors” submitted to acta-IMEKO is an extended version of the paper entitled “Experimental Characterization of Bandwidth Limits in Hall Sensors” presented at 21st IMEKO TC4 International Symposium.

Major differences, with respect to the conference paper, are the following:

* The introduction has been extended with a better description of the state of the art and application framework.
* Section 2 gives a stronger and self-consistent description of the physics theory behind Hall effect-based current sensor. This physical background is exploited to better describe and motivate the proposed measurement technique and the proposed equivalent model.
* The equivalent 2-port electrical model presented at the conference has been refined to a 3-port electrical model. This is a more general model able to better describe parasitic dynamic effects.
* Section 3 presents more simulation results supporting the proposed measurement technique and the main experimental results. Specifically, novel simulation results demonstrates that magnetic field and bias current trigger the same dynamic phenomena.
* A novel measurement has been added to the paper. Figure 9 shows frequency-domain measurement on batch b (already shown in conference paper) compared with frequency-domain measurement on batch a (this is a new result). Discussion on the frequency-domain has been added.
* More discussion has been added throughout the paper better identifying the main bandwidth upper limits.