



The PAFI project : a collaborative approach for developing tools for instruments makers

F. Ablitzer^a, E. Brasseur^b, R. Caussé^c, M. Curtit^d, J.-P. Dalmont^a, B. David^e, N. Démarais^f, V. Doutaut^d, B. Elie^g, P. Eveno^h, R. Feronⁱ, J.-M. Fouilleul^j, V. Fréour^k, F. Gautier^a, J. Gilbert^b and A. Le Duffⁱ

^aLAUM - UMR CNRS 6613, Université du Maine, avenue Olivier Messiaen, 72085 Le Mans Cedex 9, France

^bLAUM - UMR CNRS 6613, Avenue Olivier Messiaen, 72085 Le Mans Cedex 9, France

^cIrcam UMR STMS & UPMC, 1 place Igor Stravinsky, 75004 Paris, France

^dITEMM, 71 Av. O. Messiaen, 72085 Le Mans, France

^eTelecom ParisTech, 37 rue Dareau, 75014 Paris, France

^fAtelier de Lutherie, 13 rue du Docteur Mazet, 38000 Grenoble, France

^gLORIA - Speech Team, Campus scientifique Batiment C, BP 239, 54506 Vandoeuvre-Les-Nancy, France

^hMcGill University, 555 Sherbrooke Street West, Montreal, QC, Canada H3A 1E3

ⁱESEO, 10 Boulevard Jean Jeanneteau, 49100 Angers, France

^jLutherie Guitare, La villate, 35270 Cuguen, France

^kMcGill University, Schulich School of Music, 555 Sherbrooke St. W., Montreal, QC, Canada H3A 1E3
francois.gautier@univ-lemans.fr

ISMA2014/124

The PAFI project : a collaborative approach for developing tools for instruments makers

F. Ablitzer^a, E. Brasseur^b, R. Caussé^c, M. Curtit^d, J.-P. Dalmont^a, B. David^e, N. Démarais^f, V. Doutaut^d, B. Elie^g, P. Eveno^h, R. Feronⁱ, J.-M. Fouilleul^j, V. Fréour^k, F. Gautier^a, J. Gilbert^b and A. Le Duffⁱ

^aLAUM - UMR CNRS 6613, Université du Maine, avenue Olivier Messiaen, 72085 Le Mans Cedex 9, France

^bLAUM - UMR CNRS 6613, Avenue Olivier Messiaen, 72085 Le Mans Cedex 9, France

^cIrcam UMR STMS & UPMC, 1 place Igor Stravinsky, 75004 Paris, France

^dITEMM, 71 Av. O. Messiaen, 72085 Le Mans, France

^eTelecom ParisTech, 37 rue Dareau, 75014 Paris, France

^fAtelier de Lutherie, 13 rue du Docteur Mazet, 38000 Grenoble, France

^gLORIA - Speech Team, Campus scientifique Batiment C, BP 239, 54506 Vandoeuvre-Les-Nancy, France

^hMcGill University, 555 Sherbrooke Street West, Montreal, QC, Canada H3A 1E3

ⁱESEO, 10 Boulevard Jean Jeanneteau, 49100 Angers, France

^jLutherie Guitare, La villate, 35270 Cuguen, France

^kMcGill University, Schulich School of Music, 555 Sherbrooke St. W., Montreal, QC, Canada H3A 1E3

francois.gautier@univ-lemans.fr

The history of musical instruments shows that they have mainly been developed empirically. The engineers and the researchers in acoustics can nowadays propose many sophisticated tools to characterize and to model complex mechanical systems (by identifying modal characteristics of a vibrating structure or a column of air), to characterize materials (by measuring mechanical modulus), to analyze musical sounds (by proposing tools for processing and representing sound signals). Adapting such tools to the specific context of instrument's maker workshop is a real challenge: a collaborative approach involving makers and acousticians is allowing the development of a software and hardware platform called PAFI (Plateforme d'Aide à la Facture Instrumentale). Such a tool is designed to have moderate cost and has to include robust protocols which are easy to set up. This communication reports the progress of this PAFI project. Several examples of collaborative actions will be presented: development of specific training sessions for instruments makers, development and use of a tool called "Lutherie tools", examples of application of PAFI tools on wind and stringed instruments and on bows.