Full Life Cycle In Sustainable ICT For Reaching Energy Reduction, Energy Efficiency And Energy Proportionality

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Abstract— **Energy consumption is one of the main limiting factors for the development and deployment of large scale distributed systems (datacenters, Clouds, networks).**
A lot of academic and industrial researches propose several hardware and software based approaches in order to reduce energy consumption and to exhibit energy proportional and energy efficient capabilities. But for reaching such improvements a full vision of environmental impact of ICT must be taken into account: from material extraction, transport to design, usage and end of life. This talk will explore some challenges in dealing with ICT life cycle and will illustrate that with several scenario and examples.

SHORT BIO

Laurent Lefevre is a permanent researcher in computer science at Inria (the French Institute for Research in Computer Science and Control). He is a member of the Avalon team (Algorithms and Software Architectures for Distributed and HPC Platforms) from the LIP laboratory in Ecole Normale Supérieure of Lyon, France. He has co-authored more than 100 papers published in refereed journals and conference proceedings. He is a member of IEEE and takes part in several research projects. He has leaded the INRIA Action de Recherche Cooperative GREEN-NET project on power aware software frameworks. Laurent Lefèvre has been nominated as Management Committee member of the European COST action IC0804 on Energy efficiency in large scale distributed systems (2009-2011). He is currently involved in the NESUS COST Action IC1305 on Sustainable Ultrascale Systems and co-chair on the work package on "Energy Efficiency" (2014-2018). Laurent Lefevre was work package leader in the PrimeEnergyIT project (Intelligent Energy in Europe European call - 2010-2012). Laurent Lefevre is also the scientific representative for INRIA and executive board member in the GreenTouch consortium launched in 2010 and dedicated on energy efficiency in network.