

ETSI Workshop on Energy Efficiency – Genoa (Italy) – June 2012

**ITU-T Recommendation L.1420
Practical use within Alcatel Lucent**

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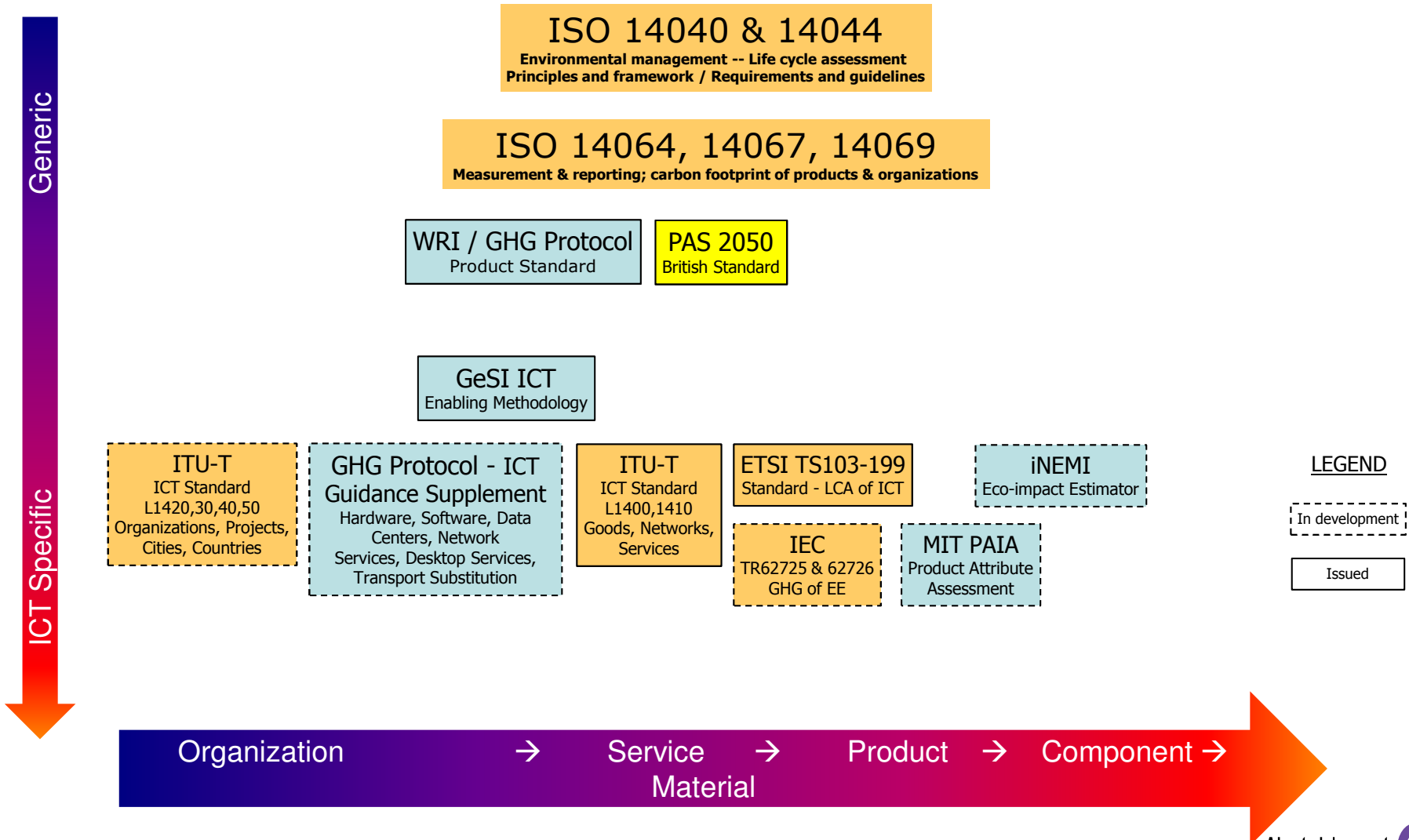
Scope

- The assessment of the environmental impact of an ICT organization.
 - An ICT organization is an organization, the core activity of which is directly related to the design, production, promotion, sales or maintenance of ICT goods, networks or services.
- The assessment of the life cycle environmental impact of ICT Goods, Networks and Services used by an non-ICT organization .
 - Other organizations
 - Not treated here
- The interpretation of these impacts and their fair and transparent reporting
 - Documentation is required
- This Recommendation does not address GHG removals or rebound effects
 - GHG removals for ICTs is not the highest priority
 - Rebound effects are still under study

Scope

- The Recommendation covers the 3 scopes:
 - **Scope 1 (Direct emissions):** Activities owned or controlled by your organization that release emissions straight into the atmosphere.
 - Examples of scope 1 emissions include emissions from combustion in owned or controlled boilers, furnaces, vehicles.
 - **Scope 2 (Energy indirect):** Emissions being released into the atmosphere associated with your consumption of purchased electricity, heat, steam and cooling.
 - These are indirect emissions that are a consequence of your organization's activities but which occur at sources you do not own or control.
 - **Scope 3 (Other indirect):** Emissions that are a consequence of your actions, which occur at sources which you do not own or control and which are not classed as scope 2 emissions.
 - Examples of scope 3 emissions are business travel by means not owned or controlled by your organization, waste disposal, or purchased materials or fuels.
- Assessment and reporting for scope 1 and scope 2 emissions are mandatory.
- Assessment and reporting for scope 3 emissions are optional.

ICT GHG and LCA Standards Initiatives



Recommendation L.1420 for ICT organizations

- Evaluation of energy consumption and GHG impact
- Setting the Organizational boundary
- Setting the Operational boundary
- Selection of quantification methodology
- Annual assessment/Establishment of a base year
- Recalculation of energy and GHG inventory (restatements)
- Uncertainties
- Reporting

Setting the Organizational boundary

- The organizational boundaries should include all operations and subsidiaries used by the organization according to the consolidation approach
 - The equity share approach – under which a company accounts for GHG emissions from operations according to its interest in the operation.
 - The control approach – under which a company accounts for 100% of the GHG emissions from operations over which it has control. Control can be defined in either operational or financial terms.
 - The operational control approach – a company has operational control over an operation if the company or one of its subsidiaries has the full authority to introduce and implement its operating policies at the operation.
 - The financial control approach – a company has financial control over an operation if the company has the ability to direct the financial and operating policies of the operation with a view to gaining economic benefits from its activities.
- The Recommendation does not mandate any particular approach but the chosen approach shall be the only applied approach.

Alcatel Lucent : Operational Control Approach

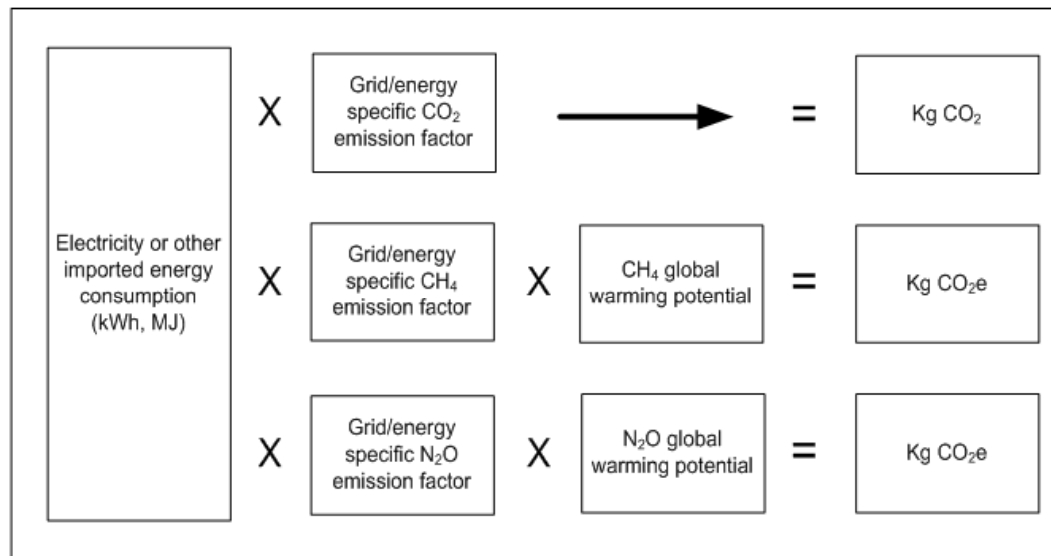
Setting the Operational boundary

- Establishing operational boundaries involves
 - identifying GHG emissions and energy consumption associated with the organization's activities
 - Categorizing them as direct or indirect
 - Assigning the appropriate scope for accounting and reporting
- Not always an easy task!!

Alcatel Lucent : world-wide Scope 1, Scope 2 and Scope 3 activities

Selection of quantification methodology

- Selection or development of GHG emission factors
- Calculation of GHG emissions as under



GWP factors for GHG taken from IPCC Time frame of 100 years

Emission factors

- According to Recommendation L.1420, the organization shall select or develop emission factors that :
 - are derived from a recognized origin,
 - are appropriate for the GHG source concerned,
 - are valid at the time of quantification,
 - take into account the quantification uncertainty and are calculated in a manner intended to yield accurate and reproducible results, and
 - are consistent with the intended use of the GHG inventory.
- Except for GWP factors, no strict recommendations are made
 - A lot of emission factors databases exist
 - National : ADEME, DEFRA, US EPA
 - International : IEA (International Energy Agency)
 - May be a need for improvement, since companies will choose their own emission factors sources, making comparisons relatively difficult and result consistency challengeable

Emission factors

- Emission Factors employed within the GHG Inventory Management System are:
 - USEPA Climate Leaders Greenhouse Gas Inventory Protocol Core Module Guidance
- Electricity Emission Factors were obtained from the following sources:
 - United States Source - eGRID EMISSION FACTORS
 - Canada: CO₂e factors from Canada's "National Inventory Report"
 - Australia: Australian Greenhouse Office Factors and Methods Workbook
 - UK: 2009 Guidelines to Defra/DECC's GHG Conversion Factors for Company Reporting
- International Sources (unless noted otherwise):
 - CO₂: International Energy Agency, "CO₂ Emissions from Fuel Combustion"
 - CH₄/N₂O: International Electricity Emission Factors by Country
 - International Energy Agency
 - Intergovernmental Panel on Climate Change (IPCC)
- Alcatel Lucent annually verifies that references and emission factors are kept current
- When updated emissions rates become available, the inventory is subsequently be updated to reflect the correct emission rates for each year.

Data Collection

- Identify the relevant GHG activity data required.
- Extract the data which is further required for GHG emission quantification.
 - Facility usage rates of electricity, fossil fuels, purchased steam and chilled water are obtained from invoices supplied by the service provider.
 - Mobile fleet usage is tracked via the corporate fueling card account program
 - Business travels are tracked by the corporate travel agency
 - Employee personnel vehicle usage during business travel is tracked via corporate reimbursement activities
- Put in place a data collection quality assurance!
- Define a document retention and control policy
 - What do you do with data in electronic form?
 - Disclosure policy to be set up

Alcatel Lucent : Ok + authorized contributor inputs applicable data
into a web-based tool

Annual assessment / Base year

- Assessments shall be carried out on an annual basis with the date of publication of the ITU-T Recommendation L.1420 as a reference.
- However, a different base year could be chosen when:
 - The organization estimates that the quantity and/or quality of available verifiable data for this particular different year would guarantee a more accurate evaluation of its GHG emissions and energy consumption.
 - The organization has already put in place an assessment and reporting process based on a different base year, compliant with this Recommendation.
 - The activities carried out by the organization generate unusual fluctuations of GHG emissions and/or energy consumption in such a way that the base year might not be significant.
- Any choice of a different base year shall be documented

Alcatel Lucent : Base Year 2008

Recalculation of energy and GHG inventory

- Applies under 2 circumstances:
 - Structural changes which include mergers, acquisitions and divestments and/or outsourcing or in-sourcing of GHG emitting activities.
 - Discovery of significant errors contained within the base year emission calculations which can necessitate a change in the emissions inventory.
- L.1420 makes no recommendations as to what constitutes a “significant” change and thus the need to adjust base year emissions

Alcatel Lucent : “Significance Threshold” = 5% change in total GHG emissions that would result if a correction was not made.

Uncertainties

- An uncertainty assessment for GHG emissions and energy consumption shall be performed in accordance with ISO 14064-1 clause 5.4 to the extent needed to understand the inventory results.
 - It is part of a broader learning and quality process
- There are several type of uncertainties associated with GHG inventories (scientific, estimation, parameter, model, statistical, systematic).
- Analyzing and quantifying some uncertainty aspects are extremely difficult and likely beyond the scope of most organization's inventory efforts
- At present, there is no precise guidance on how to address all uncertainty related issues

Alcatel Lucent : Estimating level of errors in calculating usage rates and CO2e and evaluating the cumulative effects on the final result

Reporting

- The energy and GHG report content should contain:
 - A description of the reporting organization and the person responsible the reporting period or periods covered
 - Documentation of organizational boundaries and operational boundaries
 - The principles for collection of energy data, GHG activity data and emission factors
 - A description of the quantification methodologies used within the framework of the study
 - The results of the uncertainty assessment for GHG emissions and energy consumption performed according to ISO 14064-1
 - The results of energy consumption assessment and GHG emissions assessment
 - Any recalculations including corrections of the corresponding clauses of the previous report(s).
 - A statement that the energy report and the GHG inventory report has been prepared in accordance with the principles outlined in the Recommendation.

Alcatel Lucent : provides a report in line with the ITU-T L.1420
and training sessions are conducted annually



Conclusions

- The ITU-T Recommendation L.1420 is the unique standard (e.g. provided by an official SDO) in this domain.
- Nothing incredibly original – looks a lot like the GHG Protocol
- First feedbacks show that L.1420 is easily applicable
- Alcatel Lucent sees this Recommendation as a good document for starting its GHG assessment or improving the existing processes
- New possible areas of standardizations
 - Mandatory Assessment and Reporting of Scope 3 Activities
 - Sources of emission factors
 - Eco-labeling
- Join the ITU Energy Saving Fan Club !!

Thanks for your attention

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