

ETSI TS 103 199 V1.1.1 (2011-11)



**Environmental Engineering (EE);
Life Cycle Assessment (LCA) of ICT equipment,
networks and services;
General methodology and common requirements**

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Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Environmental Engineering (EE).

Introduction

Environmental Life Cycle Assessment (LCA) is a system analytical method and model by which the potential environmental effects related to ICT Equipment, Networks, and Services can be estimated. LCAs have a cradle-to-grave scope where the life cycle stages, i.e. *raw material acquisition, production, use, and end-of-life* are included. Transports and energy supply are moreover included in each life-cycle stage.

ISO has standardized the LCA methodology. In the present document, ICT specific additions to the ISO 14040 [1] and ISO 14044 [2] standards will be described. As addition to the ISO 14040 [1] and ISO 14044 [2] standards, the European Commission has published a handbook that gives detailed guidance on all the steps required to conduct an LCA [i.2]. This handbook will also be referred to with special ICT considerations in mind.

The present document will help LCA practitioners to perform and report their LCAs of *ICT Equipment, Networks and Services* in a uniform and transparent manner. It is possible to use the present document to get guidance on what to consider in an LCA on three levels: ICT Equipment, Networks, and Services.

The following ICT LCA applications are the most frequently used ones, but others may be identified and used as well:

- Assessment of product system environmental loadings.
- Assessment of primary energy consumption.
- Identification of life cycle stages with high significance.
- Comparisons of specific ICT Equipment, Networks, or Services.

The structure of this LCA methodology specification for ICT Equipment, Networks, and Services is shown in Figure 1.

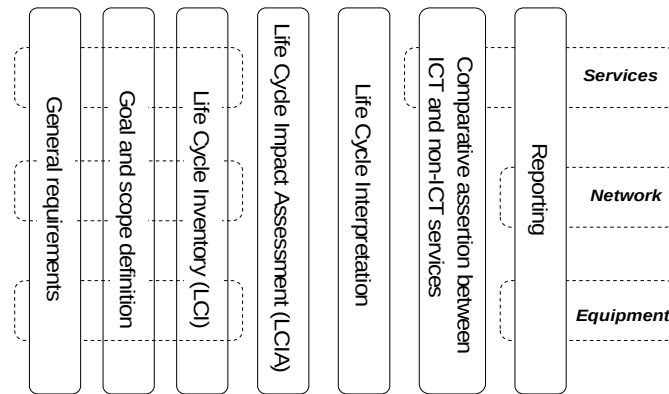


Figure 1: Structure of LCA methodology specification for ICT Equipment, Networks and Services

In accordance with ISO 14040 [1] and ISO 14044 [2], the present document consists of the following parts:

- General requirements: High level requirements of LCAs.
- Goal and scope definition: Requirements on functional unit, system boundaries and data quality.
- Life Cycle Inventory (LCI): Requirements on data collection, calculation and allocation.
- Life Cycle Impact Assessment (LCIA): Requirements on impact categories.
- Life Cycle Interpretation: Requirements on interpretation of results.
- Comparative Assertion between ICT and reference product systems.
- Reporting: Requirements on reporting.

All applicable parts are then divided into the three main applicable product system categories; *ICT Equipment*, *Networks*, and *Services*.