LCA VERIFICATION

1. Introduction

This document includes the verifier dialogue and the checklist for verification of LCA. The review is towards the procedural and methodological requirements in ISO 14067:2018. This standard is in connection with the GHG management family of standards. Namely, the LCA, communication, and critical review requirements from ISO 14044:2006, requirements for the carbon footprint of products from ISO 14067:2018.

LCA information

Product name(s):	Jabra Evolve2 85
LCA Owner:	GN Audio A/S
LCA Practitioner:	Sustainability Group of Jabra, brand of GN Audio A/S
LCA Verifier:	Odyssefs Papagiannidis, LCA consultant Kristyna Davidova, LCA consultant

VERIFICATION STATEMENT

We hereby confirm that, following the checks performed in accordance with the limits of the scope of our appointment, nothing has come to the verifiers' attention to suggest any data errors or deviations from the requirements by the above-referenced LCA project report, in terms of

- the underlying data collected and used for the LCA calculations,
- the way the LCA-based calculations has been carried out to comply with the calculation rules,
- the presentation of environmental performance included in the LCA, and
- any other information included in the declaration.
- plausibility and consistency of the company-specific data that have been examined. The declaration owner is responsible for its factual integrity and that the product does not violate relevant legislation.
- We have sufficient knowledge and experience of construction products, the construction industry, relevant standards, and the geographical area of the LCA to carry out this verification.
- We have been independent in our roles as verifiers in accordance with the requirements and guidelines of quantification of carbon footprint, i.e. We have not been involved in the execution of the LCA or in the development of the declaration and have no conflicts of interest regarding this verification.

Name and organization of verifier(s):	Odyssefs Papagiannidis Bureau Veritas HSE, Denmark Kristyna Davidova, LCA consultant Bureau Veritas HSE, Denmark
Date and location:	Fredericia 2022-03-10
Signature(s):	 Odyssefs Papagiannidis  Kristyna Davidova

DOCUMENTS BEING REVIEWED

Carbon footprint of a Jabra Evolve2 85 – Cradle to grave	2022-03-10
Name of the file(s):	Date of the file(s)
LCA Report Evolve2 85_2022 LCIA Evolve2 85 - 08.02.2022	2022-02-08 2022-02-08

2. Verification checklist: calculation rules for the life cycle assessment and requirements on the project report:

The following issues must be checked as a minimum. The check consists of checking if the issue is described in the LCA project report and if it is in line with the requirements and guidelines in the applicable reference (ISO 14044 and other standards). Most issues are mandatory to check, some can be optional.

Any deviations from the requirements should be reported by the verifier. If the issue is in line with the requirements and/or accepted by the verifier, the box “done” can be ticked.

1	GENERAL INFORMATION - AVAILABILITY	MANDATORY (M) / OPTIONAL (O)	REFERENCE	COMMENT FROM BUREAU VERITAS	APPROVED	N/A
1.1	Commissioner of LCA study, LCA practitioner	M	ISO 14044 ch. 4.2.1		✓	☐
1.2	Date of issue of LCA report	M	ISO 14044 ch. 4.2		✓	☐
1.3	Any other independent verification of the data given in the LCI/LCA documentation?	O	ISO 14044 ch. 4.2		☐	✓
2	STUDY GOAL – AVAILABILITY OF INFO	MANDATORY / OPTIONAL	REFERENCE	COMMENT FROM BUREAU VERITAS	APPROVED	N/A
2.1	Reasons for performing the Life Cycle Assessment	M	ISO 14044 ch. 4.2.2		✓	☐
2.2	Intended application – (e.g. for EPD, databases, publication etc.). Is the LCA designed in such a way that it allows B2B communication for environmental assessments?	M	ISO 14044 ch. 4.2.2		✓	☐
2.3	Target audience	M	ISO 14044 ch.4.2.2		✓	☐
3	FUNCTIONAL UNIT / DECLARED UNIT – AVAILABILITY OF INFO	MANDATORY / OPTIONAL	REFERENCE	COMMENT FROM BUREAU VERITAS	APPROVED	N/A
3.1	Functional / Declared unit, including relevant technical specification	M	ISO 14044 ch. 4.2.3.2		✓	☐
3.2	Indication of a factor for the conversion into kg/reference flow	M	ISO 14044 ch. 4.2.3.2		✓	☐

4	PRODUCT DESCRIPTION – AVAILABILITY OF INFO	MANDATORY / OPTIONAL	REFERENCE	COMMENT FROM BUREAU VERITAS	APPROVED	N/A
4.1	Composition of the product – The level of detail: the main components necessary to understand what type of product is concerned (detailed mass description is not necessary if confidential)	M	ISO 14044 ch. 4.2.3		✓	☐
4.2	System boundary including geographical scope under study. Level of detail: see 4.1	M	ISO 14044 ch. 4.2.3.3		✓	☐
5	SYSTEM BOUNDARIES IN ACCORDANCE WITH THE LIFE CYCLE STAGES DESIGN OF ISO 14067 (RAW MATERIALS ACQUISITION, MANUFACTURING AND PROCESSING, TRANSPORTATION/DELIVERY, USE AND END-OF-LIFE)	MANDATORY / OPTIONAL	REFERENCE	COMMENT FROM BUREAU VERITAS	APPROVED	N/A
5.1	Comprehensive declaration of life cycle stages: Raw materials acquisition, transportation and manufacturing and processing as a minimum requirement, if necessary, as an aggregated life cycle stage: Raw materials acquisition, transportation and manufacturing and processing	M	ISO 14044 ch. 4.2.3.3		✓	☐
5.2	Raw materials acquisition, transportation and manufacturing and processing: System boundary a) Clear description of what the life cycle stages cover b) Use of secondary materials and secondary fuels and waste produced (check end-of- waste state) c) If applicable: Reference to the certificate of the offsetting of CO_2	M CO_2 certificates optional	ISO 14044 ch. 4.2.3.3		✓	☐

5.3	Raw materials acquisition, transportation and manufacturing and processing: Allocation of co-products: a) Specification of the “end-of- waste state” b) Selection of the allocation factors for co-product allocation c) Justification of specific allocation processes (e.g. if data are not available to allocate according to the ISO 14067 rules) d) Presentation of the energy and material flows because of deviating allocation processes e) No declaration of loads and benefits in Stage beyond the system boundaries from allocation in Raw materials acquisition, transportation and manufacturing and processing	M	ISO 14044 ch. 4.3.4		✓	☐
5.4	Transportation to customer and installation (optional life cycle stage): Clear description and content of life cycle stages	M	ISO 14044 ch. 4.2.3.3		✓	☐
5.5	Use stage (optional life cycle stage): Delineation of life cycle stages	M	ISO 14044 ch. 4.2.3.3		✓	☐
5.6	Use stage (optional life cycle stage): Content of life cycle stages	M	ISO 14044 ch. 4.2.3.3		✓	☐
5.7	End-of-life (optional life cycle stage): Delineation and content of life cycle stages	M	ISO 14044 ch. 4.2.3.3		✓	☐
5.8	End-of-life (optional life cycle stage): Justification of the “end-of-waste state” a) Existing purpose b) Existing market or demand	M	ISO 14044 ch. 4.2.3.3		✓	☐

	c) Compliance with technical requirements and legal guidelines d) Fulfils limit values for Substances of Very High Concern (SVHC)					
5.9	End-of-life (optional life cycle stage): Carefully check the correct allocation	M	ISO 14044 ch. 4.2.3		✓	☐
5.10	Substitution of raw materials at the End-of-life (optional life cycle stage): System boundary and contents of Life cycle stage justified	M	ISO 14044 ch. 4.2.3		☐	✓
5.11	Substitution of raw materials at the End-of-life (optional life cycle stage): Check if the net flow calculation is done correctly taking into consideration relevant factors, e.g.: Processing losses a) Inputs in Life cycle stages Raw materials acquisition, transportation and manufacturing and processing	M	ISO 14044 ch. 4.2.3		☐	✓
5.12	Substitution of raw materials at the End-of-life (optional life cycle stage): No benefits or loads of allocated co-products	M	ISO 14044 ch. 4.2.3.4		☐	✓
6	POWER MIX (E.G. ELECTRICITY)	MANDATORY / OPTIONAL	REFERENCE	COMMENT FROM BUREAU VERITAS	APPROVED	N/A
6.1	Selection of the power mix in accordance with the location of the production site(s)	M	ISO 14044 ch. 4.2.3.4		✓	☐
6.2	If applicable: Validity of the certificates for green power	O	ISO 14044 ch. 4.2.3.4		☐	✓
7	CO_2 CERTIFICATES	MANDATORY / OPTIONAL	REFERENCE	COMMENT FROM BUREAU VERITAS	APPROVED	N/A
7.1	If applicable: Selecting allowable certificates in accordance with the PCR	O	Applicable PCR		☐	✓

7.2	If applicable: Offsetting in accordance with the requirements from the individual program operators	O	Applicable PCR		☐	✓
8	DESCRIPTION OF THE SYSTEM BOUNDARIES	MANDATORY / OPTIONAL	REFERENCE	COMMENT FROM BUREAU VERITAS	APPROVED	N/A
8.1	Transparent description of the system boundaries: Representativeness (temporal, geographical, technological) Assessment period for each life cycle stage considered in the Life Cycle Assessment (e.g. one-year average, etc.) Omissions of life cycle stages, processes and data requests Assumptions with regard to energy and electricity production incl. year of reference. It should also be transparent which electricity/energy model is applying as avoided product if energy recovery is included in the optional Stage covering benefits beyond the system boundaries. Assumptions concerning other relevant background data where relevant for the system boundary	M	ISO 14040		✓	☐
9	CRITERIA FOR EXCLUDING INPUTS AND OUTPUTS	MANDATORY / OPTIONAL	REFERENCE	COMMENT FROM BUREAU VERITAS	APPROVED	N/A
9.1	Selection of the cut-off criteria, description of application of the criteria and assumptions	M	ISO 14044:2006, section 4.3.2.		✓	☐
9.2	List of excluded processes available	M	ISO 14044:2006, section 4.3.2.		✓	☐
10	DATA COLLECTION	MANDATORY / OPTIONAL	REFERENCE	COMMENT FROM BUREAU VERITAS	APPROVED	N/A
10.1	Data collection, including data quality issues, according to LCA rules	M	ISO 14044:2006, section 4.3.2. Documentation ISO 14040		✓	☐

11	DEVELOPMENT OF SCENARIOS AT PRODUCT LEVEL IN LIFE CYCLE STAGES: TRANSPORTATION TO CUSTOMERS AND INSTALLATION, USE AND END-OF-LIFE	MANDATORY / OPTIONAL	REFERENCE	COMMENT FROM BUREAU VERITAS	APPROVED	N/A
11.1	Statement that the scenarios included are currently in use and are representative for one of the most likely scenario alternatives.	M	ISO 14044:2006, section 4.3.2		✓	☐
11.2	Documentation of the relevant technical information, e.g. recycling or reuse rates, with reference to the literature source	M			✓	☐
12	SELECTING DATA / BACKGROUND DATA	MANDATORY / OPTIONAL	REFERENCE	COMMENT FROM BUREAU VERITAS	APPROVED	N/A
12.1	Selection and use of generic data and background data justified and validity demonstrated	M	ISO 14044:2006, section 4.2.3.6		✓	☐
12.2	Data as follows: < 10 years for background data < 5 years for manufacturer's data Data manufacturer based on 1-year average Time period of 100 years in case of a landfill scenario, longer if relevant Technical background complies with physical reality Integrity of generic data records, system limit and cut- off criteria for generic data records validity demonstrated	M	ISO 14044 ch. 4.2.3.6		✓	☐
12.3	Documentation on data / background data: Name of the (background) data record, its source (database, literature source etc.), year of data collection and its representativeness Handling missing data Assessing data quality	M	ISO 14044 ch. 4.2.3.6		✓	☐

12.4	Manufacturing data should be reproducible, e.g. by available data management systems, random checks could be carried out or based on importance; some data could be checked in the verification.	O			✓	☐
13	ALLOCATIONS	MANDATORY / OPTIONAL	REFERENCE	COMMENT FROM BUREAU VERITAS	APPROVED	N/A
13.1	General allocation principles applied (avoidance of allocation, no double counting / omissions, uniform application of the allocation rules etc.)	M	ISO14044:2006 4.3.4		✓	☐
13.2	Presentation and justification of allocations in the use of secondary materials or secondary fuels as raw materials	M	ISO14044:2006 4.3.4		✓	☐
13.3	Presentation and justification of allocations in the plant (delineation from other products in a plant)	M	ISO14044:2006 4.3.4		✓	☐
13.4	If applicable: Presentation and justification of allocation of multi-input processes (e.g. landfilling or incineration)	M	ISO14044:2006 4.3.4		✓	☐
13.5	Co-product allocation correctly applied, see also 5.3	M	ISO14044:2006 4.3.4		✓	☐
13.6	Documentation of allocation factors used and their (independent) sources	M	ISO14044:2006 4.3.4		✓	☐
13.7	Allocation process for reuse, recycling and recovery, check specifically: Consistency with other scenarios of waste management Conventional average technologies and practices Specification and justification of end-of-waste state where applicable If applicable (stage covering benefits beyond the system boundaries): Selecting substituted processes in accordance with the PCR or (if no	M	ISO14044:2006 4.3.4		☐	✓

	PCR is available) representative actual processes If applicable (substitution in Stage covering benefits beyond the system boundaries): Calculation of net flows Conservative approach, i.e. choice of those scenarios and calculation rules that reflect the highest environmental impacts in comparison to other choices					
14	LIFE CYCLE MODELING INFORMATION	MANDATORY / OPTIONAL	REFERENCE	COMMENT FROM BUREAU VERITAS	APPROVED	N/A
14.1	Transparent presentation of Life Cycle Assessment modelling (for example by tables, screenshots from Life Cycle Assessment software programs etc.)	M	ISO14044:2006 4.4		✓	☐
14.2	Clear description how company data are used in which data records in Life Cycle Assessment software programs	M	ISO14044:2006 4.4		✓	☐
14.3	Assignment of process data to the life cycle stages	M	ISO14044:2006 4.4		✓	☐
14.4	For several locations/products: Presentation of modelling of all locations and products as well as weighting thereof	M			✓	☐
14.5	Plausibility and consistency of data (mass balance, energy balance) Balances on company level and in the life cycle. e.g. Mass balance between reference flow and wastes for cradle to grave data / Mass of non-energetic resources used coherent with the reference flow / CO and CO_2 emissions coherent with the mass of fossil energetic resources / check of the sum of non-renewable and renewable parts or between feedstock and fuel parts / Is the energy indicators coherent with the energetic resources used?	M	ISO14044:2006 4.4		✓	☐

15	PARAMETERS OF THE LIFE CYCLE INVENTORY ANALYSIS AND LIFE CYCLE IMPACT ASSESSMENT	MANDATORY / OPTIONAL	REFERENCE	COMMENT FROM BUREAU VERITAS	APPROVED	N/A
15.1	Presentation of the parameters describing the potential climate change impact of each GHG emitted and removed by the product system	M	ISO14044:2006 4.4.2		✓	☐
15.2	Selection of correct characterisation factors and elimination of long-term emissions (> 100 years)	M	ISO14044:2006 4.4.2		☐	✓
15.3	Justification of characterisation factors applied in case of input/output flows	M	ISO14044:2006 4.4.2		✓	☐
15.4	Information on the environmental impacts in the project report: Reference to characterisation models and factors	M	ISO14044:2006 4.4.2 ISO 14040 ch. 3.37		✓	☐
16	INTERPRETATION	MANDATORY / OPTIONAL	REFERENCE	COMMENT FROM BUREAU VERITAS	APPROVED	N/A
16.1	Interpretation of the results based on a dominance / contribution analysis of selected indicators	O	ISO14044:2006 4.5		✓	☐
16.2	Relationship between the results of the Life Cycle Inventory Assessment and the results of the Life Cycle Impact Assessment (LCIA)	M	ISO14044:2006 4.5		✓	☐
16.3	Assumptions and restrictions as regard the interpretation of results in the LCA, in terms of both methods and data	M	ISO14044:2006 4.5		✓	☐
16.4	Variance from the means of LCIA results must be presented if generic data is provided from several sources or [the results] refer to a number of similar products.	M	ISO14044:2006 4.5		☐	✓
16.5	Data quality assessment	M	ISO14044:2006 4.5		✓	☐

16.6	Comprehensive transparency as regards value decisions, justifications, and expert opinions	M	ISO14044:2006 4.5		✓	☐

3. Dialogue between verifier and LCA practitioner during the verification process

The dialogue between the external verifier and LCA Practitioner during the verification process may be documented in a separate document.

Any deviations from the requirements, the dialogue between verifier and LCA practitioner, and as well improvements made following the verification process should be documented in a transparent way and in English.

No.	CHAPTER, ARTICLE, PARAGRAPH, TABLE	TYPE OF COMMENT (ED, TE, GE)	REFERENCE TO CHECKLIST OR PROGRAMME INSTRUCTIONS	VERIFIER COMMENT AND RECOMMENDATION	LCA PRACTITIONER ANSWER	FINAL VERIFIER STATEMENT
1	3.4	TE	ISO 14044 ch. 4.2.3.2	A further explanation should be provided about the packaging box in reference flow.	An extra explanation for the Functional Unit was provided, i.e including accessories.	OK
2	3.11	TE	ISO 14044 ch. 4.3.2	Documentation of the relevant technical information e.g. recycling, or reuse rates is missing.	Documentation from the marketing department and sources were provided.	OK
3	3.12	TE	ISO 14044 ch. 4.3.2	Information shall be obtained if aluminium comes 100 % from primary sources or from Recyclable materials used in multiple product systems.	Video documentation has been presented in off-site review on 08.03.2022	OK
4	3.14	TE	ISO 14044 ch. 1.3	The phrase "'Please add whatever ever is needed from Reviewer's site to this chapter." Shall be deleted or elaborated on the reviewer's site.	The phrase was erased and corrected.	OK
5	4.1.4	TE	ISO 14044 ch. 4.3.2	Documentation of the relevant technical information e.g. recycling or reuse rates, is missing.	Documentation from the marketing department and sources were provided.	OK

6	6.1	TE	ISO 14044 ch. 4.2.3.4	Documentation of the relevant technical information and explanation of chosen energy mix.	Documentation, explanation, and source were provided.	OK
7	6.1	TE	ISO 14044 ch. 4.4.2	Documentation of the relevant technical information and explanation of choice production process instead of “market for”.	Documentation, explanation, and source were provided.	OK
8	6.1			Grammatical error “This input was still be used, as the geographical location is believed to be of importance here”.	Grammatical errors were corrected and sent for approval.	OK
9	6.1	TE	ISO 14044 ch. 4.4.2	Documentation of the relevant technical information and explanation of the PCB modelling	The explanation was provided.	OK
10	6.1	TE	ISO 14044 ch. 4.4.2	Documentation of the relevant technical information and explanation of the process “die cutting”.	The explanation was provided.	OK
11	6.7.1	TE	ISO 14044 ch. 4.5.3.4	Change of impact assessment method moved to “consistency check”.	Documentation was provided.	OK
12	7 Conclusions	TE	ISO 14044 ch. 4.3.2	The exact locations of manufacturing and distribution facilities are confidential, but they should be shown to verifying team for transparency if supplier-specific information is used.	The names and locations of T1 and T2 suppliers were presented on off-site review on the 08.03.2022.	OK
13	9 Annex A	TE	ISO 14044 ch. 4.5	Documentation of the relevant technical information and explanation of the DQA e.g. Time	Documentation and explanation were provided	OK

				representative and definition.		
14	9 Annex A	TE	ISO 14044 ch. 4.3.2	Documentation of the relevant technical information and explanation of the process “Assembly water and electricity”.	Documentation and explanation were provided.	OK
15	9 Annex B	TE	ISO 14044 ch. 4.4	Documentation of the relevant technical information of an LCIA overview with LCA level Carbon footprints.	Documentation and explanation were provided.	OK
16	9 Annex C	TE	ISO 14044 ch. 4.3.2	Documentation of the relevant technical information e.g. source and assumptions of recycling or reuse rates – missing.	Documentation, source, and explanation were provided.	OK
17	9 Annex D	TE	ISO 14044 ch. 4.3.2	Documentation of the relevant technical information e.g. source of assembly data.	Documentation and source were provided.	OK