

Revised Call for Tender

for

one Anthropometric Survey Participant

Launch: 2021-07-08

~~Original offer period/Deadline for tenders: 2021-08-30~~

Revised offer period/Deadline for tenders: 2021-09-13

Tender validity period: 2022-02-28

I Introduction

I.1 General

The following project requires technical work and research and is subject to this call for tender:

- Development of a new CEN Technical Report on anthropometric and strength data of children in Europe;

As DIN does not have the necessary expertise the involvement of subcontractors for fulfilling the respective work packages is necessary. For this project a Technical Project Leader (Technical Project Leader 1) has been contracted who is responsible for anthropometric and strength surveys and acquiring data (forming the basis for the new CEN technical report). In addition, an Anthropometric Survey Participant will be contracted (subject to this call for tender) who will support the Technical Project Leader by conducting an anthropometric survey in a European country.

NOTE For a second project on a new CEN Technical Report on the application of anthropometric and strength data another Technical Project Leader (Technical Project Leader 2) has been contracted who will develop guidelines on the application of anthropometric and strength data. These guidelines will form the basis for drafting another new CEN technical report.

I.2 Context

The European Committee for Standardization (CEN) is a business facilitator in Europe, removing trade barriers for European industry and consumers. Its mission is to foster the European economy in global trading, the welfare of European citizens and the environment. Through its services it provides a platform for the development of European Standards and other technical specifications. CEN's National Members are the National Standardization Bodies (NSBs), which work together to develop voluntary European Standards (ENs), together with the CEN CENELEC Management Centre (CCMC). For an overview of the CEN members see the [CEN website](#).

In the past several years, CEN received from the European Commission a number of Mandates for standardisation projects related to childcare articles, toys and other products destined for or used by children. Experts involved in the works of several CEN Technical Committees (CEN/TC) related to children have identified and emphasised the need of having precise and relevant requirements corresponding to the real use of the products that they are standardizing. For this purpose, the use of correct and up-to-date anthropometric data is of great importance.

Availability of correct anthropometric data is essential to define appropriate (safety) requirements such as probes, openings, loads, accessibility etc. in order to avoid/reduce entrapment, strangulation risks etc. The use of incorrect or out-of-date data may cause the (safety) requirements not to cover all children to whom they are destined. Furthermore, experience and knowledge of the anthropometric experts and manufacturers show that values for body measures and physical strength of children have

remarkably changed in the past 30 years and no European-wide collection of data has been recently conducted to fill this gap. Additionally, due to lack of a single source of up-to-date and confirmed data, different technical bodies in the European Standardization system have been developing their own approaches to defining the safety requirements to address risks posed to children. This has led to a fragmentation of the requirements which might cause confusion to consumers, manufacturers and market surveillance authorities.

The existing horizontal CEN/ISO technical report CEN ISO/TR 7250-2 provides “Statistical summaries of body measurements from individual ISO populations”. The technical report, however, only covers four European countries (Austria, Germany, Italy and The Netherlands) and as the body dimensions of people have been increasing in many countries over the last decades some of the information contained might already be outdated. Furthermore, it only contains information for working age people and for children there is no such document available. For this reason it is necessary to acquire anthropometric data of children and to provide the stakeholders, in particular industry, with this information, e.g. in a CEN technical report.

For this reason, CEN carries out, within CEN/TC 122 “Ergonomics” and in particular CEN/TC 122/WG 1 “Anthropometry”, a project to acquire anthropometric data of children and to provide the stakeholders, in particular industry and CEN technical committees, with this information, i.e. in a CEN technical report. In addition, a CEN technical report on the correct application of anthropometric and strength data will be developed. DIN, the national standards body for Germany, provides the secretariat of both, CEN/TC 122 and CEN/TC 122/WG 1, and performs the administrative management of the standardization work.

As the knowledge about existing anthropometric data and its availability (e.g. commercially available data from private providers or scientific publications) and on the specific demand of data from the relevant stakeholders, e.g. standards writers, industry etc. was limited and in order to avoid unnecessary work, the project was subdivided into two project phases:

Project phase 1:

- research on the existence, quality and availability of anthropometric data of children in Europe resulting in collection of state of art of the data;
- evaluation of databases with respect to suitability for standardization;
- research on the demands from relevant stakeholders on anthropometric data of children, e.g. standards writers and industry, with regard to the application of anthropometric data;
- comparison of the existence/availability of, and the demands for anthropometric data in order to identify the gap between available data and demands concerning their application;
- definition of detailed work plan comprising of objectives and actions to be taken to address these gaps and demands in the second project phase;
- elaboration of a rough planning for project phase 2 including estimations on time schedule and budget.

Project phase 2 (objectives relevant for this call for tender are highlighted in green):

- acquisition of necessary available anthropometric and strength data of children in Europe;
- development of programme for the measurement of anthropometric and strength data of children in Europe in consultation with the stakeholders;
- **supplementary measurement of required anthropometric and strength data to complement the existing data;**
- practical evaluation of existing and actualized databases;
- elaboration of guidelines on how to correctly apply anthropometric and strength data of children, e.g. when writing a standard or designing a product;
- publication of CEN technical report(s) on anthropometric and strength data of children in Europe and on the correct application of this data.

The first project phase was finalized by the end of 2016. The results of the first project phase formed the basis for the planning of the second project phase which is subject to this call for tender.

II Objectives

The objectives of the project are to identify, acquire and measure the anthropometric and strength data of children required by the relevant stakeholders and to publish corresponding data in a CEN Technical Report.

In a first phase of the project (SA 2014-09) available databases of anthropometric and strength data and the stakeholder needs for such data have already been identified and a gap analysis has been performed.

The objectives of the second phase are (work packages relevant for this call for tender are highlighted in green):

- acquisition of relevant existing available anthropometric and strength data of children in Europe;
- development of a programme for the measurement for obtaining anthropometric and strength data of children in Europe to complement existing data (based on the needs identified in project phase 1 and in consultation with the stakeholders);
- measurement of required anthropometric data to complement the existing data;
- practical evaluation of existing and actualized databases and processing and harmonization of data coming from both, acquired databases and the measuring campaign;
- estimation of measures in order to complement acquired and measured data to fill identified gaps;
- development of statistical anthropometric and strength tables;
- elaboration of guidelines on how to correctly apply anthropometric and strength data of children, e.g. when writing a standard or designing a product;
- publication of 2 CEN technical report on anthropometric and strength data of children in Europe and on the correct application of such data.

III Execution

III.1 General

The main tasks of the project are subcontracted to Technical Project Leader 1 and an Anthropometric Survey Participant (subject to this call for tender). DIN will carry out the procedural work and sign the contracts with the selected subcontractors following the approval of the selection by EC.

NOTE Besides the service contract (see Annex E for the draft service contract) also a data processing agreement (DPA) will be concluded in order to comply with Regulation (EU) 2016/679 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data.

The Technical Project Leader is responsible for the anthropometric and strength surveys and for acquiring existing data. He will be supported by the Anthropometric Survey Participant. CEN/TC 122/WG 1 will monitor, supervise, guide and support the work of the subcontractors.

In collaboration with the subcontractors and based on the results of their work, CEN/TC 122/WG 1 will develop a CEN technical report on anthropometric and strength data of children in Europe.

More detailed information on the tasks of the project is given in Annex B.

III.2 Time frame

The service contract shall enter into force on the date on which it is signed by the last contracting party. The contract with the selected Anthropometric Survey Participant will be signed following the approval of the selection by EC.

The execution of the tasks may not start before the contract has been signed.

The subprojects shall be finalized until 2025-06-30. Detailed time frames for the respective projects are given in Annex B.

NOTE According to the agreement between CEN and the European Commission (SA 2019-07) the project shall be finalized by 2024-06-30. However, due to the COVID-19 restrictions the anthropometric and strength surveys had to be postponed which will result in a significant delay of the overall project. Presently, a prolongation of the project by one year (i.e. new deadline: 2025-06-30) is expected but the overall delay will depend on how the situation with COVID-19 and the related restrictions develop. The European Commission has already been informed about the need of an extension but no formal amendment to agreement SA 2019-07 has been concluded. The amendment will be formally requested once the anthropometric survey participant has been selected.

The Anthropometric Survey Participant shall respect the deadlines of the deliverables. If deadlines are not kept, EC is entitled to withhold payment.

IV Financial support

The European Commission and EFTA have decided to provide financial support to technical work and research on anthropometric and strength data of children and the standardization work. The financial support from the European Commission and EFTA is based on the Framework Partnership Agreement (FPA) 2014. Unless specified otherwise, and on condition of approval by EC and EFTA, costs of external subcontractors such as laboratories are generally funded at 100%, with approx. 95% being borne by EC and 5% by EFTA. Costs have to qualify as eligible as defined in FPA 2014, be justified and accepted by EC/EFTA. The payment is usually divided into several instalments after completion of defined milestones and approval of the interim/final reports and the justification of costs. The subcontractors shall fulfil the conditions of the FPA 2014, including those relating to liability, ownership of results, confidentiality, conflict of interests, publicity, evaluation, assignment, checks and audits.

The Anthropometric Survey Participant's costs shall be justified with copies of the relevant invoices. All relevant evidence shall be kept in view of future payments (reports, work, drafts and deliverables, contracts & invoices, time sheets, tickets, boarding cards, hotel invoices, attendance lists with signatures, meeting agendas & reports, invoices for any consumables, purchase orders etc.).

All work to be done under the service contract is based on a pre-financing basis by the applicant.

Payments shall be made in accordance with article 4 of the draft service contract (Annex E).

Costs incurred before the selection procedure is finalized and approved by EC will not be covered by financial support.

V Eligibility criteria

The following candidates will be excluded:

- Candidates who were the subject of a non-likely judgment of recourse for a professional infringement;
- Candidates who are in an irregular tax situation or in an irregular special taxation situation;
- Candidates who provide incomplete or erroneous information.

VI Selection criteria

The applicants shall comply with the following requirements:

1. Financial and economic capacity to execute the project

- Sufficient economic and financial capacity to guarantee continuous and satisfactory performance throughout the envisaged lifetime of the contract;
- Sufficient financial capacity in relation to the pre-financing foreseen under the contract.

2. Technical and professional capacity

- experience in the field of anthropometry for at least 10 years (body measures);
- experience in planning and performing anthropometric surveys using both traditional and 3D scanning methods;
- experience with comparable projects on anthropometric surveys on body measures and data aggregation for industrial application, product development and comparative product evaluation;
- experience as an evaluator of anthropometric data in the sense of EN ISO 7250-1, EN ISO 15535 and EN ISO 20685.

VII Award criteria

The selection of the Technical Project Leader will be made on the basis of the following criteria:

1. Price award criterion

- Price (30 %)

2. Qualitative award criteria

- Quality of the proposed methodology (15 %)
- Organization of the work and allocation of resources (25 %)
- Quality control measures (15 %)
- Ability to submit agreed deliverables at specified dates and detailed cost estimations (15 %)

Tenders scoring less than 70 % of the overall total points of the qualitative award criteria or less than 50 % of the points awarded for a single criterion of the qualitative award criteria will be excluded from the remaining assessment procedure.

The selection panel shall select the candidate with the highest score. In the case of two or more candidates of equal qualification, the tender providing the best value for money shall be taken into consideration by the selection panel.

VIII Tenders

VIII.1 Form of the tender

Tenders shall be sent by postal mail to the secretary of CEN/TC 122 "Ergonomics" Mr Sebastian Lenz, as soon as possible, to be received at the latest by **2021-09-13** (offer period).

Tenderers must place the bid inside a sealed envelope clearly marked CONFIDENTIAL, placing the sealed envelope in an envelope which is posted to the address indicated.

Late delivery will lead to the non-admissibility of the tender and its exclusion from the award procedure for this contract. Offers sent by email or by fax will also be non-admissible. Envelopes found open at the opening session will also lead to non-admissibility of the tender.

Tenders must be signed by the tenderer or his duly authorised representative.

Submission of a tender implies acceptance of the terms and conditions set out in this call for tender and its annexes. It is binding on the tenderer to whom the contract is awarded for the duration of the contract.

VIII.2 Content of the tender

The tender shall be in English and contain:

- Information about the organisation/s of the tenderer (name, website, contact person(s), phone, email).

- Curriculum Vitae of each relevant person participating in the project, demonstrating the necessary expertise.
- Appropriate documentation to prove the economic and financial capacities.
- A time schedule and a detailed description of the execution of the tasks which will be carried out in the project such as training, anthropometric survey etc.
- Any further documents to prove the qualification required in the above clauses on Selection and Award criteria.
- A table in the format given in **Annex A** with detailed information on the costs of e.g. anthropometric survey, participation in meetings, travel expenses etc.
- A signed declaration of veracity conforming to **Annex C**, by which the candidate(s) certifies not to be subject to one of the exclusion criteria as described in Clause “Eligibility criteria” and the veracity of the adjoining documents.
- A declaration of complete documentation containing all information about the documents necessary to be submitted with a tender in the format given in **Annex D**.

Variants are not allowed.

Please note that, to grant equal treatment of all tenders, it is not possible to modify offers after their submission in relation to the technical and financial proposals. Please note also, that proposals deviating from the technical specifications may be rejected for non-conformity.

VIII.3 Period of validity of the tender

The offer must remain valid for a period of 6 months following the final date for submitting tenders (tender validity period).

VIII.4 Contact between the contracting authority and the tenderer

Contacts between the contracting authority and tenderers are prohibited throughout the procedure save in exceptional circumstances and under the following conditions only:

- Before the final date for submission of tenders:
 - At the request of the tenderer, the contracting authority may provide additional information solely for the purpose of clarifying the nature of the contract.
 - The contracting authority may, on its own initiative, inform interested parties of any error, inaccuracy, omission or other clerical error in the text of the call for tenders.
- After opening for tenders:
 - If clarification is requested or if obvious clerical errors in the tender need to be corrected, the contracting authority may contact the tenderer provided the terms of the tender are not modified as a result.

The requests for additional information may be made to the address below by email:
Secretary of CEN/TC 122, Mr Sebastian Lentz, e-mail: sebastian.lentz@din.de.

If due to requests or other reasons supplementary information to this call for tender is required, this will be published on the website of the DIN Standards Committee Ergonomics (www.din.de/go/naerg).

VIII.5 Assessment and award of contract

The selection and appointment of the Anthropometric Survey Participant will be conducted by a selection panel composed of the chairman and the secretary of CEN/TC 122, the convener of CEN/TC 122/WG 1, a representative of Technical Project Leader 1 and a representative of the CEN CENELEC Management Centre (CCMC).

The contracts with the selected Anthropometric Survey Participant will be signed following the approval of the selection by EC.

Please send your application to

DIN Deutsches Institut für Normung e. V.
Normenausschuss Ergonomie (NAErg)
Mr Sebastian Lentz
Am DIN-Platz
Burggrafenstr. 6
10787 Berlin (Germany)
Tel: +49 30 2601-2715
Fax: +49 30 2601-42715
Mail: sebastian.lentz@din.de
<http://www.din.de>
www.din.de/go/naerg

Annex A

The following table shall be used in the tender to give detailed information on the costs.

Organisation / Staff level	Daily rate	Number of man-days	Total	Travel budget	Others (Supplies, Consumables, data acquisition)	Total cost
	0,00	0	0,00	0,00	0,00	0,00
	0,00	0	0,00	0,00	0,00	0,00
	0,00	0	0,00	0,00	0,00	0,00

Annex B

Description of tasks

B.1 Tasks

Anthropometric Survey Participant will participate in the anthropometric survey and will in particular carry out the following tasks:

- attend training(s) carried out by Technical Project Leader 1 (measuring protocols etc.) in order to ensure that data obtained are equivalent with the data generated by Technical Project Leader 1 (see clause III of Annex 1 [of the draft service contract in Annex E]).
- conduction of an anthropometric survey in accordance with Annex 1 [of the draft service contract in Annex E] and in particular:
 - o the survey shall cover at minimum one of the countries specified in Table 1 of Annex 1 [of the draft service contract in Annex E];
 - o the minimum sample size and sampling groups required for the different measures are indicated in Table 2 of Annex 1 [of the draft service contract in Annex E];
 - o implementing the measuring programme to complete acquired data, with scanning technology and traditional methods according to Annex 1 [of the draft service contract in Annex E].
- for quality control and processing, monthly provision of 3D scans, hand images and data from anthropometric survey in a format specified by Technical Project Leader 1.

NOTE 1 Technical Project Leader 1 will carry out strength and anthropometric surveys in Spain and acquire relevant existing data.

NOTE 2 Changes to/deviations from the requirements of the anthropometric measuring protocol in Annex 1 [of the draft service contract in Annex E] are only permissible if approved by Technical Project Leader 1 and confirmed by CEN/TC 122/WG 1.

B.2 Time schedule

The following time schedule applies:

I Anthropometric survey etc.

I.1	Training	2022-04-30
I.2	Anthropometric survey	2024-03-31

II Reporting

II.1	1 st interim report (for submission to European Commission)	2022-11-15
II.2	2 nd interim report (for submission to European Commission)	2023-08-15
II.3	Final report (for submission to European Commission)	2024-06-30

NOTE According to the agreement between CEN and the European Commission (SA 2019-07) the anthropometric survey shall be finalized by 2023-03-31. Due to the COVID-19 restrictions the anthropometric and strength surveys, however, had to be postponed which will result in a significant delay of the overall project. Presently, a prolongation of the project by one year (i.e. new deadline for anthropometric survey: 2024-03-31) is expected but the overall delay will depend on how the situation with COVID-19 and the related restrictions develop. The European Commission has already been informed about the need of an extension but no formal amendment to agreement SA 2019-07 has been concluded. The amendment will be formally requested once the anthropometric survey participant has been selected.

Annex C

Declaration of Veracity

I, the undersigned, acting as duly authorized representative of

<<*name of the Organisation*>>

hereby declare that none of the exclusion criteria as stated under section V of the Call for Tender apply.

In particular, I certify that

<<*name of the Organisation*>>

is

- not the subject of a non-likely judgement of recourse for a professional infringement,
- not in an irregular tax situation or in an irregular special taxation situation.

On behalf of

<<*name of the Organisation*>>

I certify that any and all information provided in the tender documents submitted is complete and correct.

I also certify that I had no conflict of interest by submitting the present offer.

(Date, Signature of authorized representative)

Annex D

Declaration of Complete Documentation

The following documents were submitted with the tender:

- Curriculum Vitae of each relevant person participating in the project, demonstrating the necessary expertise
- A time schedule and a detailed description of the execution of the tasks which will be carried out in the project
- A table in the format given in **Annex A** with detailed information on the costs of e.g. travel expenses etc
- Appropriate documentation to prove the economic and financial capacities
- Any further documents to prove the qualification required in the above clauses on selection and award criteria
- A signed Declaration of Veracity in the form of **Annex C**
- This present Declaration of Complete Documentation enumerating all documents necessary to be submitted with a tender

(Date, Signature of authorized representative)

Annex E

Draft Service Contract

DRAFT Service contract

Between

DIN Deutsches Institut für Normung e. V.
Am DIN-Platz
Burggrafenstr. 6
10787 Berlin (Germany)
hereinafter referred to as "DIN"

and

[Details of the contractor/Anthropometric Survey Participant]
hereinafter referred to as the "CONTRACTOR"

Introduction

The European Commission/EFTA has decided to fund SA/CEN/2019-07 "Anthropometric Data of children". This project is dealt with by CEN/TC 122 "Ergonomics" and in particular CEN/TC 122/WG 1 "Anthropometry", the secretariats of which are held by DIN. DIN assures the organizational coordination work on behalf of CEN/TC 122 and CEN/TC 122/WG 1, respectively.

1. Object of the Service contract

The CONTRACTOR agrees that it will participate as Anthropometric Survey Participant for the duration of the project starting from the conclusion of this contract and finishing by 2025-06-30. It is tasked to produce the following deliverable:

- anthropometric data of children in a format specified by Technical Project Leader 1;
- Final report on the project.

NOTE According to the agreement between CEN and the European Commission (SA 2019-07) the project shall be finalized by 2024-06-30. However, due to the COVID-19 restrictions the anthropometric and strength surveys had to be postponed which will result in a significant delay of the overall project. Presently, a prolongation of the project by one year (i.e. new deadline: 2025-06-30) is expected but the overall delay will depend on how the situation with COVID-19 and the related restrictions develop. The European Commission has already been informed about the need of an extension but no formal amendment to agreement SA 2019-07 has been concluded. The amendment will be formally requested once the anthropometric survey participant has been selected. If required, the end date and target dates of this contract will be amended.

2. Duties of the CONTRACTOR

The CONTRACTOR will participate in the anthropometric survey. The CONTRACTOR's duties will include the following tasks:

- attend training(s) carried out by Technical Project Leader 1 (measuring protocols etc.) in order to ensure that data obtained are equivalent with the data generated by Technical Project Leader 1 (see clause III of Annex 1).
- conduction of an anthropometric survey in accordance with Annex 1 and in particular:
 - o the survey shall cover at minimum one of the countries specified in Table 1 of Annex 1;
 - o the minimum sample size and sampling groups required for the different measures are indicated in Table 2 of Annex 1;
 - o implementing the measuring programme to complete acquired data, with scanning technology and traditional methods according to Annex 1.
- for quality control and processing, monthly provision of 3D scans, hand images and data from anthropometric survey in a format specified by Technical Project Leader 1.

Changes to/deviations from the measuring protocol in Annex 1 are only permissible if approved by Technical Project Leader 1 and confirmed by CEN/TC 122/WG 1.

The CONTRACTOR undertakes to perform its duties with reasonable care and skill applying recognized practices. The CONTRACTOR is not entitled to subcontract any rights and obligations of this Service contract without the prior written consent of DIN.

In particular, the following target dates for each step shall be adhered to. In case of non-adherence to the target dates, the Commission/EFTA is entitled to cancel the funding.

I Anthropometric survey etc.

I.1	Training	2022-04-30
I.2	Anthropometric survey	2024-03-31

II Reporting

II.1	1 st interim report (for submission to European Commission)	2022-11-15
II.2	2 nd interim report (for submission to European Commission)	2023-08-15
II.3	Final report (for submission to European Commission)	2024-06-30

According to the agreement between CEN and the European Commission (SA 2019-07) the anthropometric survey shall be finalized by 2023-03-31. However, due to the COVID-19 restrictions the anthropometric and strength surveys had to be postponed which will result in a significant delay of the overall project. Presently, a prolongation of the project by one year (i.e. new deadline for anthropometric survey: 2024-03-31) is expected but the overall delay will depend on how the situation with COVID-19 and the related restrictions develop. The European Commission has already been informed about the need of an extension but no formal amendment to SA 2019-07 has been concluded. The amendment will be formally requested once the anthropometric survey participant has been selected. If required, the end date and target dates of this contract will be amended upon approval by the European Commission.

The CONTRACTOR has to record the expenses for material and human resources (including exact date and hours). These records have to be kept for 10 years for

possible inspection by DIN or a charged legal institution. Upon request, DIN or a charged legal institution shall have unhindered access to the accounts and documents which may be required for auditing purposes.

<< The following paragraph applies only to subcontractors not established in the EEA >>DIN and the CONTRACTOR aim to fulfil their duties in a way that takes into account their social and environmental responsibilities, including the delivery of sustainable livelihoods and development opportunities to people. The CONTRACTOR undertakes to meet the relevant social and environmental standards. In particular, the CONTRACTOR commits itself not to use child labour and adheres to the UN Convention on the Rights of the Child, and national / local law on the employment of children. The CONTRACTOR ensures that there is no forced labour in its workforce. The CONTRACTOR provides a safe and healthy working environment for employees. It complies, at a minimum, with national and local laws and ILO conventions on health and safety. Working hours and conditions for employees comply with conditions established by national and local laws and ILO conventions. If the CONTRACTOR is engaged in production, it undertakes to maximize the use of raw materials from sustainably managed sources in their ranges, buying locally when possible. It uses production technologies that seek to reduce energy consumption and where possible use renewable energy technologies that minimize greenhouse gas emissions. It seeks to minimize the impact of its waste stream on the environment.

3. Obligations of DIN

DIN will send the CONTRACTOR on its request the final report of the project the CONTRACTOR participated in.

4. Invoicing and Payment

In consideration of the work carried out according to this Service contract, the CONTRACTOR shall invoice to DIN a maximum daily rate of ... € per man-day up to a maximum of ... man-days totalling a maximum sum of ... € and a maximum sum of ... € for travel and other costs (e.g. consumables). Invoicing shall be done as follows:

Step 1: 1 st interim report (II.1)	up to 25% of above sum;
Step 2: 2 nd interim report (II.2)	up to 50% of above sum;
Step 3: Final report (II.3) and acceptance of Final Draft Technical Report	the remaining balance.

The invoice shall state the following VAT numbers:

DIN: UST-ID-Nr: DE 136 622 143

DIN: UST-Nr: 27/640/50470

CONTRACTOR VAT identification number:

The aforesaid sum shall be understood to cover all expenditure incurred by the CONTRACTOR in the performance of this contract.

The payments are due only if the CONTRACTOR has fulfilled the tasks within the given time schedule, DIN has approved the results and the CONTRACTOR has sent a detailed invoice (material, cost for staff, travel etc.) that fulfils the requirements described below. All items shall be based on real costs as actually incurred. Estimated costs shall not be invoiced.

DIN has the right to demand invoices and documentation of work done before paying.

Payments will be made to the CONTRACTOR with the following Bank details:

[Name of the Bank]

[Full address of Bank]

€ (EUR) Account No ...

IBAN (International Bank Account Number): ...

BIC or SWIFT CODE (Business Identifier Code): ...

Each invoice shall comply with the requirements listed in the annexed document from EC, and be accompanied by a declaration of the work performed clearly stating the extent to which the tasks have been fulfilled.

The declaration:

- must be signed;
- must specify that 'working days' means 'full working days'
- must specify the period within which the tasks were performed.

The total amount that the CONTRACTOR will in fact receive depends on whether the defined tasks of the CONTRACTOR have been completed (the number of days actually spent by the CONTRACTOR in the context of this service contract, or the extent of tasks fulfilled if the number of man days was not specified).

Payment by DIN does not constitute acceptance of performance and is subject to the complete and due performance of the contract.

5. Provisions relating to fiscal charges

The CONTRACTOR will remain responsible for all taxes imposed on it and other related obligations that arise as a result of this Service contract.

6. Responsibility and Liability

DIN shall in no case, and under no circumstances, be held responsible for claims arising out of the present Service contract and relating to damages caused by the CONTRACTOR, its employees or a third party. No request of indemnity or reinstatement relating to such claims may be addressed to DIN.

The CONTRACTOR shall, in respect of the staff designated for the performance of this Service contract, observe all regulations of labour law, in particular the regulations of social security and fiscal law.

7. Confidentiality

The CONTRACTOR undertakes to maintain confidentiality as regards all actions necessary to fulfil the contracted duties. Both parties commit themselves to mutual loyalty.

8. Copyright

The CONTRACTOR undertakes to assign to DIN (or as DIN may direct) its patrimonial rights of exploitation and all and any intellectual property rights in the works developed by it under the scope of this Service contract.

Such assigned rights include reproduction rights including the publication, distribution, adjustment, translation, renting, loan, the remuneration rights for duplication and loan, as well as the rights of communication to the public of the works, in total or in part, in summary or with comments, and including the right to transfer all exploitation licences and to authorise all sub-licences.

The transfer of rights covers all languages and covers all forms of exploitation known at present and non-restrictively; publication by all means and via all graphical support systems, by print, press, photocopy, microfilms and via all magnetic, computerised and numerical support systems, memory cards, CD-ROMs, films, photographs, slides, teledistribution, cable, satellite, disks and online document servers.

For all and each of the assigned exploitation modes, the transfer is granted free of charge, for all countries and for the total duration of the intellectual property rights.

9. Termination

Regardless of other claims, in the case of serious disrespect of the terms of the Service contract by the CONTRACTOR (inter alia where the work is not provided in accordance with the terms of this Service contract, or not completed within the time limits according to this Service contract), DIN may cancel the contract at any time without notice.

Should the performance of the project as a whole be obstructed or jeopardized by circumstances beyond the control of the parties, DIN may cancel the Service contract giving six weeks' notice.

10. Withdrawal

DIN is entitled to withdraw from this Service contract if the European Commission/EFTA does not pay the funds to DIN or retroactively reclaims funds already paid to DIN under the Specific Grant Agreement, as any such payment is dependent on EC's acceptance of the interim and final reports defined in the Specific Grant Agreement.

11. Administrative provisions

With the exception of invoices, all correspondence with DIN concerning the performance of this Service contract shall be addressed as follows:

Sebastian Lentz, Secretary of CEN/TC 122/WG 1
Phone: +49 30 2601-2715
email: sebastian.lentz@din.de

All invoices to DIN shall be addressed as follows:

DIN Deutsches Institut für Normung e. V.
Buchhaltung
Am DIN-Platz
Burggrafenstr. 6
10787 Berlin

All correspondence with the CONTRACTOR shall be addressed as follows:

<<Mr/Ms NN Phone: , email>>

12. Assignment

The CONTRACTOR shall not assign, transfer, subcontract or in any other manner make over to any third party the benefit and/or burden of this Service contract without the prior written consent of DIN. If DIN gives such written consent, the CONTRACTOR shall ensure that any such subcontractor is aware of its duties and adheres to all requirements of this Service contract.

13. Alterations to the Service contract

Subsidiary agreements and modifications to this Service contract are only legally binding when in written form and signed by both parties. This applies also to any agreement by which such written form requirement is to be contracted out.

14. Validity

If any of the provisions of this Service contract shall become or be held invalid or unenforceable, this shall not affect any part of the remaining contract.

15. Place of jurisdiction

Place of jurisdiction for all disputes arising out of or in connection with this Service contract shall be Berlin.

16. Applicable Law

This Service contract shall be governed by and interpreted in accordance with German Law.

17. Data processing agreement

The Parties shall conclude a data processing agreement in accordance with the provisions of the General Data Protection Regulation, e.g. based on the model in Annex 3.

For DIN Deutsches Institut für Normung e. V.

For the CONTRACTOR

.....
Christoph Winterhalter
Chairman of the Executive Board
(Stamp)

.....
<<Name, Position>>
(Stamp)

(Date)

(Date)

.....
i. V. Reiner Hager
Head of Group "Sustainability and
Management Systems"

Annex 1
Requirements of the anthropometric measuring protocol

Annex 2
EC Mandatory Content of an Invoice

Annex 3
Data processing agreement

Annex 1

Requirements of the anthropometric measuring protocol

I Countries eligible for the survey

Table 1 – Countries eligible for the survey

Northern Europe	
Denmark	DNK
Estonia	EST
Finland	FIN
Iceland	ISL
Ireland	IRL
Latvia	LVA
Lithuania	LTU
Norway	NOR
Sweden	SWE
United Kingdom of Great Britain and Northern Ireland	GBR
Western Europe	
Austria	AUT
Belgium	BEL
Germany	DEU
Liechtenstein	LIE
Luxembourg	LUX
Netherlands	NLD
Switzerland	CHE
Eastern Europe	
Belarus	BLR
Bulgaria	BGR
Czechia	CZE
Hungary	HUN
Poland	POL
Republic of Moldova	MDA
Romania	ROU
Russian Federation	RUS
Slovakia	SVK
Ukraine	UKR

II Sample size for anthropometric measures

Table 2 – Sample size for anthropometric measures
(each cell indicates the minimum number of children required)

	BODY MEASURES		HEAD MEASURES		FOOT MEASURES		HAND MEASURES	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
≥ 3 months to < 6 months	60	60	40	40	40	40	45	45
≥ 6 months to < 9 months	60	60	40	40	40	40	45	45
≥ 9 months to < 12 months	60	60	40	40	40	40	45	45
≥ 1 year to < 2 years	60	60	40	40	40	40	45	45
≥ 3 year to < 4 years	75	75	40	40	40	40	45	45
≥ 5 year to < 6 years	75	75	40	40	40	40	45	45
≥ 7 year to < 8 years	75	75	40	40	40	40	45	45
≥ 9 year to < 10 years	105	105	40	40	40	40	60	60
≥ 11 year to < 12 years	105	105	40	40	40	40	60	60
≥ 13 year to < 14 years	105	105	40	40	40	40	60	60
≥ 15 year to < 16 years	105	105	40	40	40	40	60	60

III Training activities

The Participant has to participate in the training activities described below. Part of the training sessions will be done at the facilities of Technical Project Leader 1 (TPL1, Instituto de Biomecnica de Valencia, Spain).

- *Measuring protocols.* TPL1 will transfer the measuring protocols for the whole set of anthropometric measures to be acquired, including postures and definition of measurements to be acquired, in order to assure the compatibility of data between countries and their subsequent harmonization.
- *Survey planning.* TPL1 will transfer recommendations on how to plan the sessions, data management procedures, risk management during the survey and informative documentation to inform the organizations collaborating during the survey.
- *Data management and data transfer to TPL1.* A data repository will be agreed so that TPL1 can process the data as it is collected.
- *Quality assurance plan.* TPL1 will train the subcontractor on the procedures to control the quality of the gathered data.
- *Coordination procedures.* TPL1 will agree with the anthropometric survey participant the coordination procedures to be utilised to ensure continuous monitoring of the survey development. Procedures will include telephone/web conferences, meetings and monthly reports on the collected and processed data.

IV Anthropometric survey activities

The anthropometric survey participant has to perform the activities described below.

- *Planning the survey*: including: measuring equipment, clothing, logistics, rewards, etc.
- *Preparation of informative documentation under the supervision of TPL1*, including ethical approval, informed consent of parents or guardians and management of personal information according to the General Data Protection Regulation (GDPR).
- *Conduction of the anthropometric survey*. The anthropometric survey participant will carry out the anthropometric survey following the *Measuring protocols* transferred by TPL1. TPL1 in consultation with Technical Project Leader 2 will oversee the development of the survey from the beginning through regular telephone/web conferences, including at least a meeting every 6 months after the start of the survey.

V List of anthropometric measurements

V.1 Association of age groups in age ranges


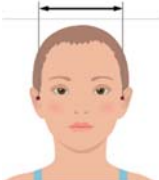
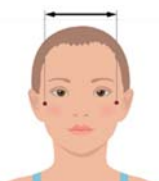


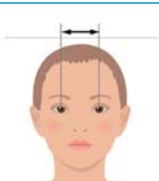

This annex shows the set of measurements that are relevant to this project, arranged by body part or type of body measurement. The target measurements are different for each age range. Therefore, the age groups included in each age range are shown in Table 3.



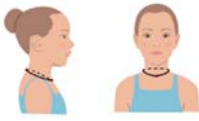
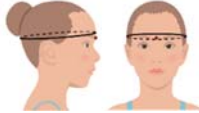

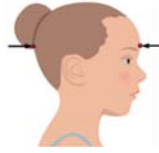

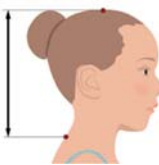

Table 3 – Association of age groups in age ranges


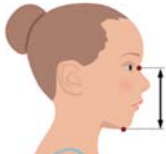



AGE RANGE	AGE GROUPS
0-1-year-old	≥ 3 months to < 6 months
	≥ 6 months to < 9 months
	≥ 9 months to < 12 months
1-3 years old	≥ 1 year to < 2 years
	≥ 3 year to < 4 years
4-16 years old	≥ 5 year to < 6 years
	≥ 7 year to < 8 years
	≥ 9 year to < 10 years
	≥ 11 year to < 12 years
	≥ 13 year to < 14 years
	≥ 15 year to < 16 years

V.2 Head

Table 4 – Head measurements.




NAME	DESCRIPTION	Image	0-1 y.o.	1-3 y.o.	4-16 y.o.
1	Head breadth (EN ISO 7250-1:2017, 6.3.10 - Childdata: 8)		X	X	X
2	Ear to ear (bitrignon) breadth (Childdata: 13)			X	X
3	Face breadth (bizygomatic or cheekbones) (Childdata: 14)			X	X
4	Face breadth (brow ridges) (Childdata: 15)			X	X
5	Jaw breadth (Childdata: 16)			X	X
6	Eye separation (Interpupilar distance) (Childdata: 21)			X	X
7	Neck breadth (Childdata: 25)			X	X










8	Bitrignon arc of the head (EN ISO 7250-1:2017, 6.3.14)	Arc from one trignon over the crown of the head to the other trignon perpendicular to the Frankfurt and sagittal arc. Tape measure is held on the trignon of one side of the head and led over the crown to the trignon on the other side. Hair shall be included in the measurement.		X	X	X
9	Neck circumference (EN ISO 7250-1: 2017, 6.4.9) – Neck girth (ISO 8559-1:2017, 5.3.2)	Girth of the neck at a point just below the bulge at the thyroid cartilage (Adam's apple), and measured perpendicular to the longitudinal axis of the neck. Subject sits or stands erect with head in the Frankfurt plane.			X	X
10	Neck-base girth (ISO 8559-1:2017, 5.3.3)	Girth of the base of the neck measured over Cervicale, the neck shoulder points, and the medial superior borders of the left and right clavicles. Subject sits or stands erect with head in the Frankfurt plane.			X	X
11	Head circumference (EN ISO 7250-1:2017, 6.3.12) / Head girth (ISO 8559-1:2017, 5.3.1) – Childdata: 10	Maximum, approximately horizontal, girth of head measured above glabella and crossing the rearmost point of the head. Hair shall be included in the measurement. Subject sits or stands erect with head in the Frankfurt plane.		X	X	X
12	Sagittal arc of the head (EN ISO 7250-1:2017, 6.3.13)	Arc from the glabella over the skull to the nuchale. Tape measure is held on the glabella and led over the head so as to pass over the rearmost point of the skull to the nuchale. Hair shall be compressed.		X	X	X
13	Head length (EN ISO 7250-1:2017, 6.3.9) – Childdata: 9	The distance along a straight line from the most anterior protrusion of the forehead (glabella) to the most posterior point on the back of the head (opisthocranium). Position of head has no influence on the measurement.		X	X	X
14	Maximum head diameter (chin to back of head) (Childdata: 12)	The rectilinear distance from the chin to the crown of the head. The subjects stand erect with head in the Frankfurt plane and jaws closed.			X	X
15	Head height (7th Cervicale)	The height of the head from the vertex (top of the head) to the 7th Cervicale. The subjects sit erect with head oriented in the Frankfurt plane (looking straight ahead) and arms hanging at sides.			X	X
16	Head height (Chin to Vertex) (Childdata: 11)	The height of the head from the vertex (the top of the head) to the menton (bottom of the chin). The subjects sit erect with head oriented in the Frankfurt plane (looking straight ahead) and arms hanging at sides.			X	X









17	Face height (Childata: 17)	The vertical distance of the face from the crinion (the top of the brow) to the menton (the bottom of the chin). The subjects sit erect with head oriented in the Frankfurt plane (looking straight ahead) and arms hanging at sides.			X	X
18	Face length (menton-sellion) (EN ISO 7250-1:2017, 6.3.11) – Childata: 18	Distance between sellion and menton. Subject keeps mouth closed. Head is oriented in the Frankfurt plane.			X	X
19	Mouth breadth (Childata: 22)	With the mouth relaxed the horizontal distance between the angles of the mouth at the point where the mucous membrane joins the skin.			X	X
20	Mouth opening (between incisors) (Childata: 23)	The maximum vertical distance measured between the incisors (front teeth) with the jaws open as wide as possible.			X	X
21	Mouth breadth (fully open)	The maximum horizontal distance measured between the right and left corners of the mouth with the jaws open as wide as possible.			X	X




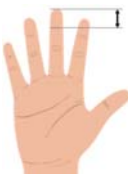
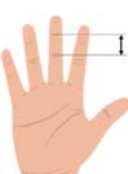



V.3 Hand


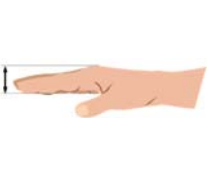
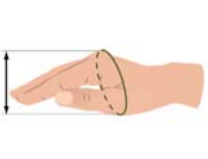
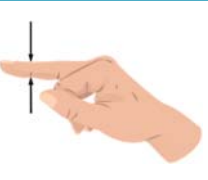


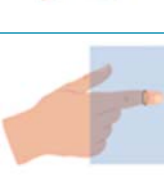
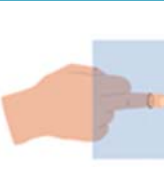

Table 5 – Hand measurements.


NAME		DESCRIPTION	Image	0-1 y.o.	1-3 y.o.	4-16 y.o.
1	Hand length (to wrist crease) (EN ISO 7250-1:2017, 6.3.1 – ISO 8559-1:2017, 5.5.2)	The distance from the tip of the middle finger, along its long axis, to a line connecting the radial and ulnar styloid processes. Subject holds the forearm horizontal with hand stretched out flat, palm up. The point of measurement at the styloid process corresponds approximately to the middle skin furrow of the wrist.		X	X	X
2	Palm length (EN ISO 7250-1:2017, 6.3.2 – ISO 8559-1:2017, 5.5.3)	The distance from the midpoint of the proximal crease at the base of the middle finger to the most distal wrist crease. Subject holds forearm horizontal with hand stretched out flat, palm up.			X	X
3	Hand length (to thumb crotch) (Childata: 72)	The distance from the crotch of the thumb to the tip of the middle finger. The subject extends the right hand with the palm up and thumb away (abducted) from hand.			X	X

4	Hand breadth at metacarpals (EN ISO 7250-1:2017, 6.3.3)	Projected distance between radial and ulnar metacarpals at the level of the metacarpal heads from the second to the fifth metacarpal, measured perpendicular to the long axis of the middle finger. Subject holds forearm horizontal with hand stretched out flat, palm up.		X	X	X
5	Hand breadth at thumb (Childata: 75)	The maximum distance across the hand and thumb at the level of the middle joint of the thumb. The subject extends the hand and the thumb is held against the side of the palm.			X	X
6	Hand girth (ISO 8559-1:2017, 5.5.1)	Maximum girth over the knuckles (metacarpals). Subject holds forearm horizontal with hand outstretched, fingers extended, and thumb abducted.		X	X	X
7	Thumb breadth at distal joint (Childata: 85)	The maximum breadth measured across the distal joint of the thumb.			X	X
8	Index finger breadth, distal (EN ISO 7250-1:2017, 6.3.6)	Maximum breadth of the second finger in the region of the joint between middle and distal phalanges. Subject holds the forearm horizontal with hand stretched out flat and fingers spread, palm up.			X	X
9	Index finger breadth, proximal (EN ISO 7250-1:2017, 6.3.5)	Maximum breadth of the second finger in the region of the joint between middle and proximal phalanges. Subject holds forearm horizontal with hand stretched out flat and fingers spread, palm up.			X	X
10	Middle finger breadth at distal joint (Childata: 97)	The maximum breadth measured across the distal (furthest) joint of the middle finger.			X	X
11	Middle finger breadth at middle joint (Childata: 98)	The maximum breadth measured across the middle joint of the middle finger.			X	X
12	Fourth finger breadth at distal joint (Childata: 103)	The maximum breadth measured across the distal (furthest) joint of the fourth finger.			X	X

1 3	Fourth finger breadth at middle joint (Childata: 104)	The maximum diameter measured across the middle joint of the fourth finger.			X	X
1 4	Little finger breadth at distal joint (Childata: 106)	The maximum diameter measured across the distal joint of the little finger.			X	X
1 5	Little finger breadth at middle joint (Childata: 107)	The maximum breadth measured across the proximal joint of the little finger.			X	X
1 6	Thumb length (Childata: 85)	The distance from the skin crease at the base of the thumb to the tip of the thumb parallel to the long axis of the thumb. The subject extends the right hand and fingers with the palm facing up and the thumb away (abducted) from hand. Measurement is taken on the palmar surface of the hand.			X	X
1 7	Index finger length (EN ISO 7250-1:2017, 6.3.4)	The distance from the tip of the second finger to the proximal finger crease on the palm of the hand. Subject holds forearm the horizontal with the hand stretched out and fingers spread, palm up. Measurement is taken on the palmar surface of the hand.			X	X
1 8	Middle finger length (Childata: 93)	The distance from the skin crease at the base of the middle finger to the tip of the middle finger parallel to the long axis of the middle finger. The subject extends the right hand and fingers with the palm facing up. Measurement is taken on the palmar surface of the hand.			X	X
1 9	Fourth finger length (Childata: 102)	The distance from the skin crease at the base of the fourth finger to the tip of the fourth finger parallel to the long axis of the fourth finger. The subject extends the right hand and fingers with the palm facing up. Measurement is taken on the palmar surface of the hand.			X	X
2 0	Little finger length (Childata: 105)	The distance from the skin crease at the base of the little finger to the tip of the little finger parallel to the long axis of the little finger. The subject extends the right hand and fingers with the palm facing up. Measurement is taken on the palmar surface of the hand.			X	X

21	Thumb length (distal joint to tip)	The distance from the center of the distal (end or furthest) joint to the tip of the thumb, measured on the palm of the hand with the hand fully extended.			X	X
2 2	Index finger length (distal joint to tip)	The distance from the center of the distal (end or furthest) joint to the tip of the index finger, measured on the palm of the hand with the hand fully extended.			X	X
2 3	Index finger length (middle joint to distal joint)	The distance from the centre of the middle joint to the centre of the distal (end or furthest) joint of the index finger, measured on the palm of the hand with the hand fully extended.			X	X
2 4	Middle finger length (distal joint to tip) (Childdata: 94)	The distance from the center of the distal (end or furthest) joint to the tip of the middle finger, measured in the palm of the hand with the hand fully extended.			X	X
2 5	Middle finger length (middle joint to distal joint) (Childdata: 95)	The distance from the centre of the middle joint to the centre of the distal (end or furthest) joint of the middle finger, measured in the palm of the hand with the hand fully extended.			X	X
2 6	Fourth finger length (distal joint to tip)	The distance from the center of the distal (end or furthest) joint to the tip of the fourth finger, measured on the palm of the hand with the hand fully extended.			X	X
2 7	Fourth finger length (middle joint to distal joint)	The distance from the centre of the middle joint to the centre of the distal (end or furthest) joint of the fourth finger, measured on the palm of the hand with the hand fully extended.			X	X
2 8	Little finger length (distal joint to tip)	The distance from the center of the distal (end or furthest) joint to the tip of the little finger, measured on the palm of the hand with the hand fully extended.			X	X

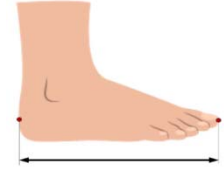
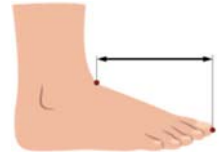
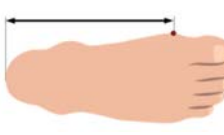
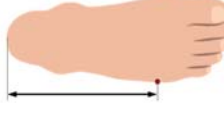

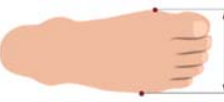
2 9	Little finger length (middle joint to distal joint)	The distance from the centre of the middle joint to the centre of the distal (end or furthest) joint of the little finger, measured on the palm of the hand with the hand fully extended.			X	X
3 0	Hand depth (Childata: 76)	The maximum distance between the palm of the hand and the dorsum of the hand at the level of the metacarpal joint (the first or largest knuckle) of the middle finger.				X
3 1	Hand clearance (maximum aperture) (Childata: 78)	The subject extends the right hand and holds the fingers together to form its narrowest configuration. With a hand measurement board, the smallest diameter through which the hand can just pass without forcing it.		X	X	X
3 2	Middle finger depth at distal joint (Childata: 99)	The maximum depth of the middle finger at the distal joint measured from the dorsum to the palm of the finger.				X
3 3	Maximum grip diameter (between thumb and index finger) (Childata: 79)	The diameter of the cone at the level of the tip of the thumb and index finger. The subject grips a graduated cone and slides the hand down the cone until the maximum diameter that can be gripped (with thumb and index finger touching) is reached.		X	X	X
34	Thumb diameter (minimum aperture) (Childata: 87)	With a finger measurement board, the greatest diameter through which the end or furthest joint of the thumb cannot pass. The subject extends the thumb of the right hand.			X	X
3 5	Index finger diameter (minimum aperture) (Childata: 91)	With a finger measurement board, the maximum diameter through which the distal joint of the index finger cannot pass. The subject extends the index finger of the right hand.			X*	X*
3 6	Middle finger diameter (minimum aperture) (Childata: 101)	With a finger measurement board, the maximum diameter through which the distal joint of the middle finger cannot pass. The subject extends the middle finger of the right hand.			X*	X*
3 7	Fourth finger diameter (minimum aperture)	With a finger measurement board, the maximum diameter through which the distal joint of the fourth finger cannot pass. The subject extends the fourth finger of the right hand.			X*	X*

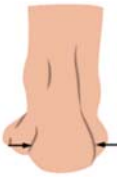


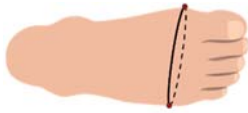




3 8	Little finger diameter (minimum aperture) (Childata: 108)	With a finger measurement board, the maximum diameter through which the distal joint of the little finger can just pass. The subject extends the little finger of the right hand.		X	X
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*Inclusion of the measurement has to be discussed with the experts from CEN-TC 122.

V.4 Foot

Table 6 – Foot measurements.

NAME		DESCRIPTION	Image	0-1 y.o.	1-3 y.o.	4-16 y.o.
1	Foot length (EN ISO 7250-1:2017, 6.3.7 – ISO 8559:2017, 5.5.5)	Maximum horizontal distance from rear of the heel to tip of the longest (first or second) toe, measured parallel to the longitudinal axis of the foot. Subject stands with weight equally distributed on both feet.		X	X	X
2	Forefoot length	The horizontal distance from the tip of the longest toe (first or second) to the top of the instep, at the junction of the lower leg and foot, measured parallel to the longitudinal axis of the foot. Subject stands with weight equally distributed on both feet			X	X
3	Distance heel – 1st metatarsal	Distance, along the longitudinal axis of the foot, from the rear of the heel to the head of the first metatarsal. Subject stands with weight equally distributed on both feet.			X	X
4	Distance heel – 5th metatarsal	Distance, along the longitudinal axis of the foot, from the rear of the heel to the head of the fifth metatarsal. Subject stands with weight equally distributed on both feet.			X	X
5	Toes width	The distance between medial and lateral surfaces of the toes, perpendicular to the longitudinal axis of the foot. Subject stands with weight equally distributed on both feet.			X	X
6	Foot breadth (EN ISO 7250-1:2017, 6.3.8)	Maximum distance between medial and lateral surfaces of the foot perpendicular to the longitudinal axis of the foot. Subject stands with weight equally distributed on both feet.		X	X	X

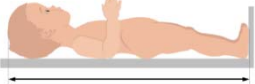



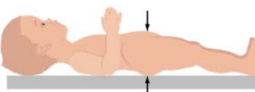

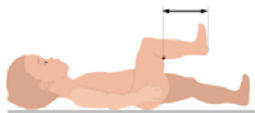
NAME		DESCRIPTION	Image	0-1 y.o.	1-3 y.o.	4-16 y.o.
7	Heel breadth (Childata: 135)	The maximum horizontal distance measured across the back of the heel.			X	X
8	Ankle breadth (Childata: 130)	The minimum breadth of the right ankle above the malleoli (the protrusions on the inside and outside of the ankle). The subject stands erect with feet together and weight evenly distributed.			X	X
9	Toes girth	Girth of the foot measured around the toes of the foot. Subject stands erect with legs slightly apart, and weight equally distributed on both feet.			X	X
10	Foot girth (ISO 8559-1:2017, 5.5.7)	Maximum girth of the foot measured around the ball of the foot. Subject stands erect with legs shoulder width apart, and weight equally distributed on both feet.		X	X	X
11	Instep girth	Girth of the foot measured around the instep of the foot. Subject stands erect with legs slightly apart, and weight equally distributed on both feet.			X	X
12	Minimum leg girth (ISO 8559-1:2017, 5.3.25)	Minimum horizontal girth of the lower leg just above the ankle bones. Subject stands erect.			X	X
13	Ankle girth (ISO 8559-1:2017, 5.3.26)	Horizontal girth of the leg measured at the level of the outer ankle point. Subject stands erect with legs shoulder width apart.		X	X	X
14	Heel to instep girth	Girth of the foot passing across the top of the instep and the most rear point of the heel in the foot plant. Subject stands with weight equally distributed on both feet.		X*	X	X

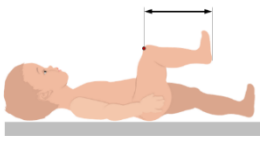
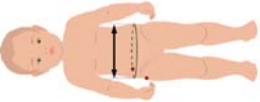
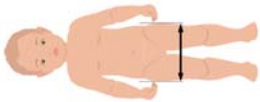

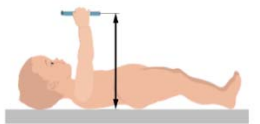
NAME		DESCRIPTION	Image	0-1 y.o.	1-3 y.o.	4-16 y.o.
15	Foot height (Childdata:132)	The maximum vertical distance from the surface underneath the foot to the top of the instep, at the junction of the lower leg and foot.		X*	X	X
16	Height of 1st toe	The vertical distance from the top of the distal joint of the big toe to the ground. Subject stands with weight equally distributed on both feet.		X*	X	X
17	Height of 1st metatarsal	The vertical distance from the top of the head of first metatarsal to the ground. Subject stands with weight equally distributed on both feet.			X	X
18	Height of 5th toe	The vertical distance from the top of the proximal joint of the fifth toe to the ground. Subject stands with weight equally distributed on both feet.			X	X
19	Height of 5th metatarsal	The vertical distance from the top of the head of fifth metatarsal to the ground. Subject stands with weight equally distributed on both feet.			X	X
20	Instep height	The vertical distance from the top of the instep to the ground. Subject stands with weight equally distributed on both feet.			X	X
21	Heel height	The vertical distance from the insertion of the Achilles tendon into the calcaneus to the ground. Subject stands with weight equally distributed on both feet.			X	X
22	Outer ankle height (ISO 8559-1:2017, 5.1.17)	The vertical distance from the floor to the underside of the sphyrion on the right leg, (the protrusion on the inner side of the ankle) is measured. The subject stands erect with feet apart and weight evenly distributed. Instrument: Height gauge.			X	X

*Inclusion of the measurement has to be discussed with the experts from CEN-TC 122.

V.5 Supine

Table 7 – Supine measurements.

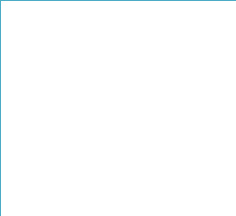
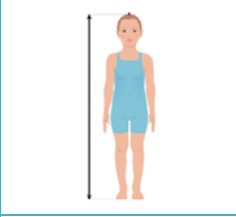
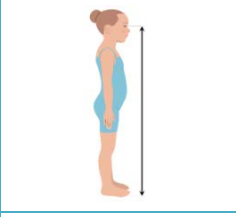
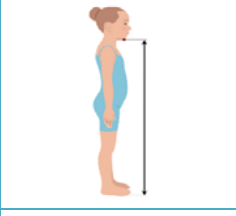
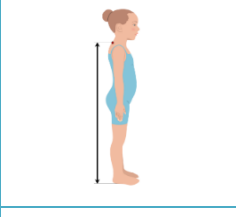
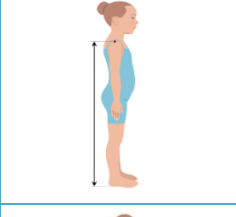
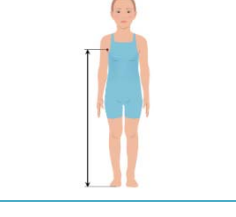
NAME		DESCRIPTION	IMAGE	0-1 y.o.	1-3 y.o.	4-16 y.o.
1	Body mass (Weight) (EN ISO 7250-1:2017, 6.1.1 – ISO 8559-1:2017, 5.6.1)	Total mass (weight) of the body. Subject stands on a weighing scale.		X		
2	Recumbent length (ISO 8559-1:2017, 5.1.2)	Horizontal distance from the vertical plate to which the soles touch to the crown of the head in the median line. Subject lies on a table with the soles touching a vertical plate. Frankfurt plane is perpendicular to the laying surface.		X		
3	Shoulder height (supine) (EN ISO 7250-1:2017, 6.1.4*)	The distance from the shoulder level to the soles. Subject lies on a table with the soles touching a vertical plate. Frankfurt plane is perpendicular to the laying surface. *Adaptation to the supine posture.		X		
4	Sitting height (supine) / Crown to rump (supine) (Childata: 5)	The distance from the vertex (top of the head) to a buttocks reference plane (or the surface of the right buttocks in infants). The subject lies on their back with the head in the Frankfurt plane with the right leg raised and the hip flexed approximately 90 degrees to the torso. The arms are placed at the sides.		X		
5	Leg length, buttock to sole (supine) (Childata: 110)	The distance from the posterior (rear) surface of the right buttock to the sole of the right foot is measured. The subject lies on their left side with hips flexed 90 degrees to the torso and the right leg fully extended.		X		
6	Hip depth (supine) (Childata: 49)	The depth of the hips (front to back) is measured just below the iliac crests (top of the hip bones) and at the level of the maximum hip breadth. The subject lies supine (on back) with legs fully outstretched.		X		
7	Buttock to popliteal length (supine) (EN ISO 7250-1:2017, 6.4.7*)	Horizontal distance from the hollow of the knee to the rearmost point of the buttock. The subject lies on their back with the right leg raised and the hip and knee at 90 degrees. *Adaptation to the supine posture.		X		
8	Lower leg length, popliteal to sole (supine)	The distance between the sole of the foot and the inferior (underside) surface of the thigh at the posterior (rear) crease of the knee. The subject lies on their back with the		X		



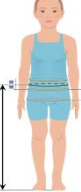
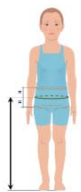
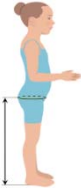
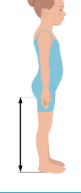
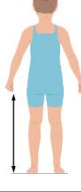
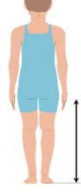
	NAME	DESCRIPTION	IMAGE	0-1 y.o.	1-3 y.o.	4-16 y.o.
	(Childdata: 125)	right leg raised and the hip and knee at 90 degrees.				
9	Lower leg length, knee to sole (supine) (Childdata: 124)	The distance from the superior (top) surface of the right knee to the heel of the right foot is measured. The subject lies on their back with the right leg raised and the hip and knee at 90 degrees.		X		
10	Waist breadth (in infants) (Childdata: 39)	The breadth of the waist just below the level of the iliac crest (the top of the thigh bone) and above the level of the greater trochanter (the top of the thigh bone).		X*		
11	Hip breadth (maximum in infants) (Childdata: 46)	Maximum horizontal distance across the hips. Subject lies on their back with their legs fully extended. Measurement is taken without pressing into the flesh of the hips.		X*		
12	Mid-thigh girth (ISO 8559-1:2017, 5.3.21*)	Horizontal girth of the thigh measured midway between the inside leg level and the centre of knee cap. Subject stands erect with legs shoulder width apart. *Adaptation to the supine posture.		X		
13	Maximum reach when the baby is lying	Distance from the lying surface to the grip axis when the baby is lying on their back and is holding a measuring rod with his/her right hand and the right arm is completely extended and the shoulder is abducted in the sagittal plane.		X		

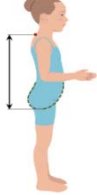


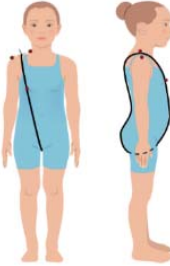


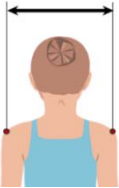
*Cylindric body of babies causes redundancy between these measurements. Which of the measurement should be included has to be discussed with the experts from CEN-TC 122.

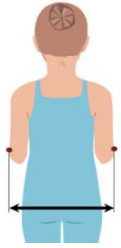



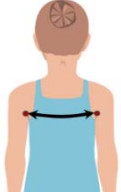

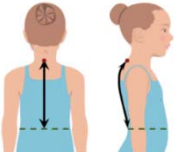
V.6 Standing

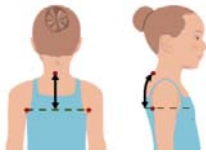

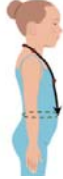




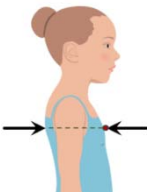
Table 8 – Standing measurements.

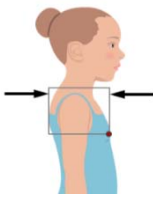
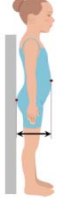
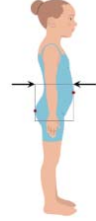
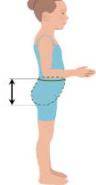



NAME		DESCRIPTION	IMAGE	0-1 y.o.	1-3 y.o.	4-16 y.o.
1	Body mass (Weight) (EN ISO 7250-1:2017, 6.1.1 - ISO 8559-1:2017, 5.6.1)	Total mass (weight) of the body. Subject stands on a weighing scale.			X	X
2	Stature (EN ISO 7250-1:2017, 6.1.2 - ISO 8559:2017, 5.1.1)	Vertical distance from the floor to the highest point of the head (vertex). Subject stands fully erect with feet together. Head is oriented in the Frankfurt plane.			X	X
3	Eye height (from floor) (EN ISO 7250-1:2017, 6.1.3)	Vertical distance from the floor to the outer corner of the eye (ectocanthus). Subject stands fully erect with feet together. Head is oriented in the Frankfurt plane.				X
4	Chin height (ISO 8559-1:2017, 5.1.3)	Vertical distance from the lowest point of the chin to the ground. Subject stands erect with feet together and the head in the Frankfurt plane.				X
5	Back neck height (ISO 8559-1:2017, 5.1.5)	Vertical distance from the back-neck point to the ground. Subject stands erect with feet together and the head in the Frankfurt plane.			X	X
6	Shoulder height (EN ISO 7250-1:2017, 6.1.4)	Vertical distance from the floor to the acromion. Subject stands fully erect with feet together. Shoulders are relaxed, with arms hanging freely.				X
7	Chest height at armpit (Childata: 32)	The vertical distance from the standing surface to the right axilla (armpit). The subject stands erect, with feet together, weight evenly distributed, arms initially raised then lowered when instrument is in place.				X


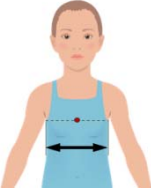
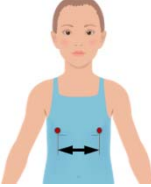
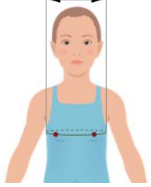
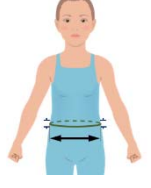
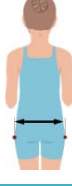
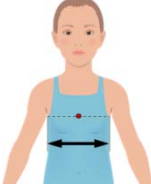
NAME	DESCRIPTION	IMAGE	0-1 y.o.	1-3 y.o.	4-16 y.o.	
8	Iliac spine height, standing (EN ISO 7250-1:2017, 6.1.6)	Vertical distance from the floor to the most downward-directed point of the iliac crest (iliospinale anterius). Subject stands fully erect with feet together.				X
9	Waist height (ISO 8559-1:2017, 5.1.10)	Vertical distance from the waist level (midway between the lowest rib point and the highest point of the hip bone at the side of the body) to the ground. Subject stands erect with feet together and abdomen relaxed.				X
10	Upper hip height (ISO 8559-1:2017, 5.1.11)	Vertical distance from the upper hip level (midway between the top-hip and waist level) to the ground. Subject stands fully erect with feet together.				X
11	Top hip height (ISO 8559-1:2017, 5.1.12)	Vertical distance from the top hip height (midway between the waist and hip levels) to the ground. Subject stands fully erect with feet together.				X
12	Maximum hip girth height (ISO 8559-1:2017, 5.1.14) – Buttock height at maximum depth (Childata: 51)	Vertical distance from the level of maximum hip girth to the ground. Subject stands fully erect with feet together.				X
13	Crotch height (EN ISO 7250-1:2017, 6.1.7)	Vertical distance from the floor to the crotch level (highest palpable level of the perineum). Subject stands with legs shoulder width apart. The measurement is taken from the rear of the body.		X	X	
14	Inside leg height (ISO 8559-1:2017, 5.1.15)	Vertical distance from the inside leg level to the ground. Subject stands with legs shoulder width apart. The measurement is taken from the rear of the body. (Inside leg level: level of the highest visible point at the junction between the right and left thighs observed from the back of subject).		X		X
15	Buttock height at gluteal furrow (Childata: 52)	The vertical distance from the standing surface to the lowest point at which the buttock curve and the back of the right thigh join. The subject stands erect with feet together and weighty evenly distributed.				X

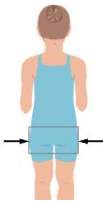


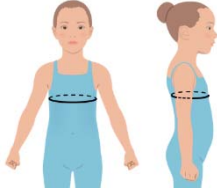
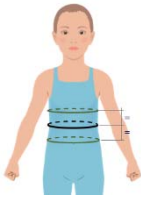


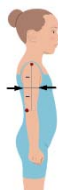
NAME	DESCRIPTION	IMAGE	0-1 y.o.	1-3 y.o.	4-16 y.o.	
16	Torso height (ISO 8559-1:2017, 5.7.3)	Vertical distance from back neck point to the inside leg level. Calculation: Back neck height (ISO 8559:2017, 5.1.5) minus inside leg height (ISO 8559:2017, 5.1.15)				X
17	Back neck point to ground (contoured) (ISO 8559-1:2017, 5.4.23)	Distance from back neck point, following the contour of the spinal column to the hip level, then vertically to the ground. Subject stands erect with feet together, arms hanging freely downward, and head in the Frankfurt plane.				X
18	Back neck point to knee (ISO 8559-1:2017, 5.7.2)	Distance from back neck point following the contour of the spinal column to the hip level and vertical level of the center of knee-cap. Calculation: Back neck point to ground length (contoured) (ISO 8559:2017, 5.4.23) minus knee height (ISO 8559-1:2017, 5.1.6).				X
19	Diagonal trunk girth (ISO 8559-1:2017, 5.3.27)	Distance from the shoulder line, midway between the side neck point and the shoulder point, down the back between the legs, over the bust point to the starting point, avoiding constriction at the crotch and the bust. The tape measure touches the body at the waistline at the front and back of the body. Subject stands erect with legs shoulder width apart, and arms hanging freely downward.				X
20	Centre trunk length (ISO 8559-1:2017, 5.3.28)	Distance from back neck point through crotch to the centre of the front neck point. Subject stands erect with legs shoulder width apart and arms hanging freely downward.				X
21	Shoulder breadth (bideltoid) (EN ISO 7250-1:2017, 6.2.8)	Horizontal distance across the maximum lateral protrusions of the right and left deltoid muscles. Subject sits or stands fully erect with shoulders relaxed.		X		X
22	Shoulder breadth (biacromial) (EN ISO 7250-1:2017, 6.2.7 – Childdata: 31)	Distance along a straight line from acromion to acromion. The subject sits or stands fully erect, with shoulders relaxed.				X

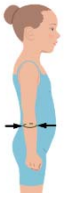

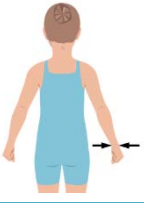

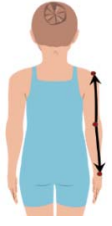


NAME	DESCRIPTION	IMAGE	0-1 y.o.	1-3 y.o.	4-16 y.o.	
23	Elbow to elbow breadth (EN ISO 7250-1:2017, 6.2.9)	Maximum horizontal distance between the lateral surfaces or the elbow region. The subject sits or stands erect with shoulders relaxed and upper arms hanging down. The upper portions of the upper arms are in contact with the sides of the body. Forearms are extended horizontally and parallel to each other and the floor. Measurement is taken without pressing into the flesh at the elbows.			X	X
24	Shoulder slope (ISO 8559-1:2017, 5.6.2)	The value, in degrees, of the angle of inclination measured with the inclinometer placed on the shoulder following a line joining the shoulder and side neck point. Subject stands erect with the arms hanging freely downward.				X
25	Back shoulder width (ISO 8559-1:2017, 5.4.2)	Distance between the right and left shoulder points following the surface. Subject stands erect with shoulders relaxed.				X
26	Shoulder length (ISO 8559-1:2017, 5.4.1)	Distance from the side neck point to the shoulder point. Subject sits or stands erect with shoulders relaxed.				X
27	Back width (armpit level)	The horizontal length across the back between the left and right armscye lines. The level of the measure is at the back point of axilla in surface length. Subject sits or stands erect with shoulders relaxed.				X
28	Across back width (ISO 8559-1:2017, 5.4.4)	Distance across the back between the left and right armscye lines. The level of the measure is midway between the shoulder point and the armpit back fold point. Subject sits or stands erect with shoulders relaxed.				X
29	Back neck point to waist (ISO 8559-1:2017, 5.4.5)	Distance from back neck point to waist level. Subject stands erect with arms hanging freely downward and shoulder relaxed. Head is in the Frankfurt plane.				X

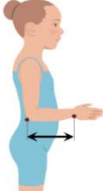



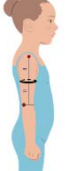



NAME	DESCRIPTION	IMAGE	0-1 y.o.	1-3 y.o.	4-16 y.o.
30	Scye depth length (ISO 8559-1:2017, 5.4.6) Distance, measured vertically on the body from back neck point to the upper edge of a tape measure passing horizontally under the arms at axilla. Subject stands erect with arms hanging freely downward. Head is held in Frankfurt plane.				X
31	Back neck point to bust point (ISO 8559-1:2017, 5.4.12) Distance from back neck point along neck base line to side neck point, then to bust point. Subject stands erect with arms hanging freely downward, head in the Frankfurt plane.				X
32	Back neck point to waist level (ISO 8559-1:2017, 5.4.13) Distance from back neck point along the neck base line to the side neck point, over the bust point, then straight to the waist level. Subject stands erect with arms hanging freely downward. Head is held in the Frankfurt plane.				X
33	Bust points around neck The distance from the right nipple, passing around through the neck shoulder points, to the left nipple.				X
34	Side neck point to bust point (ISO 8559-1:2017, 5.4.10) Distance from the neck point to the bust point. Subject stands erect with arms hanging freely downward, head in the Frankfurt plane.				X
35	Side neck point to waist level (ISO 8559-1:2017, 5.4.11) Distance from the side neck point, over the bust point, then vertically straight to the waist level. Subject stands erect with arms hanging freely downward, shoulders are relaxed head in the Frankfurt plane.				X
36	Front width (armpit level) The distance across the chest from the right to the left axilla (armpit). The subject stands erect, with feet together, weight evenly distributed, arms initially raised then lowered when instrument is in place.				X
37	Chest depth, standing (EN ISO 7250-1:2017, 6.1.9 – ISO 8559-1:2017, 5.2.5) Maximum horizontal depth of the torso measured in the midsagittal plane at the level of the mesosternale. Subject stands fully erect with feet together. Arms hanging freely downwards.				X


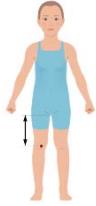



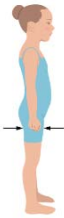

NAME		DESCRIPTION	IMAGE	0-1 y.o.	1-3 y.o.	4-16 y.o.
38	Thorax depth (ISO 7250-1 (2017): 6.2.15) - Bust depth (ISO 8559-1 (2017): 5.2.6)	Maximum horizontal depth of the thorax at the level of the bust point. Subject stands erect with arms hanging freely downwards.				X
39	Body depth, standing (EN ISO 7250-1:2017, 6.1.10)	Maximum horizontal depth of the body. Subject stands erect against a wall with feet together and arms hanging freely downwards.				X
40	Abdomen/hip depth (ISO 8559-1:2017, 5.2.7)	Maximum horizontal depth between the maximum anterior protrusion of the abdomen and the maximum prominence of the buttock. Subject stands erect with the abdomen relaxed and rear most point of the buttock touching the surface of a vertical plane. Distance is measured from the vertical plane to the maximum protrusion of the abdomen.				X
41	Straight body rise (ISO 8559-1:2017, 5.7.4)	Vertical distance between the waist level and the inside leg level. Subject stands fully erect with feet together. Calculation: Waist height (5.1.10) minus inside leg height (5.1.15)				X
42	Total crotch length (ISO 8559-1:2017, 5.4.18)	Distance from the center of the waist level at the front of the body, through the crotch (inside leg level), to the center of the back-waist level. Avoid any constriction at the crotch. Subject stands erect with legs shoulder width apart.				X
43	Front crotch length (ISO 8559-1:2017, 5.4.19)	Distance from the center of the front waist level, to the center of the inside of the thigh at the height of the inside leg level. Subject stands erect with legs shoulder width apart and arms abducted to form a 20° angle with the side of the body.				X
44	Back crotch length (ISO 8559-1:2017, 5.4.20)	Distance from the center of the back at the waist level, to the center of the inside of the thigh at the height of the inside leg level. Subject stands erect with legs shoulder width apart and arms abducted to form a 20° angle with the side of the body.				X






NAME	DESCRIPTION	IMAGE	0-1 y.o.	1-3 y.o.	4-16 y.o.
45	Side waist to hip (ISO 8559-1:2017, 5.4.21) Distance down the side of the body from the waist level to the hip level (level of the greatest projection at the back of the body – buttocks) following the surface of the body. Subject stands erect with feet together, arm abducted to form a 20° angle with the side of the body and abdomen relaxed.				X
46	Chest breadth at armpit (Childata: 33) The horizontal breadth of the chest at the level of the axilla (armpit). The subject stands erect, with feet together, weight evenly distributed, arms initially raised then lowered when instrument is in place.				X
47	Chest breadth, standing (EN ISO 7250-1:2017, 6.1.11) Horizontal breadth of the torso measured at the level of mesosternale. Subject stands fully erect with feet together and arms hanging freely downwards.				X
48	Bust point width (ISO 8559-1:2017, 5.2.3) Distance between the bust points. Subject stands erect with feet together and arms hanging freely downwards.				X
49	Chest breadth at nipples (Childata: 34) The horizontal breadth of the chest at the level of the nipples.				X
50	Waist breadth Horizontal breadth of the torso at the waist level (between the lowest ribs and the upper iliac crest). Subject stands fully erect with feet together and is asked to relax the abdominal muscles.				X
51	Hip breadth (trochanter) (Childata: 47) The horizontal distance between the right and left greater trochanter landmarks (the bony protrusions at the top of the hip bone). The subject stands erect, with feet together, weight evenly distributed.				X

NAME		DESCRIPTION	IMAGE	0-1 y.o.	1-3 y.o.	4-16 y.o.
52	Hip Breadth, standing (EN ISO 7250-1:2017, 6.1.12)	Maximum horizontal distance across the hips.				X
53	Chest circumference (EN ISO 7250-1:2017, 6.4.10) - Bust girth (ISO 8559-1:2017, 5.3.4)	Horizontal girth measured at the bust point level. Subject stands erect with arms hanging freely downward. Measurement must be taken in middle breathing position.			X	X
54	Chest girth (at axilla) (ISO 8559-1:2017, 5.3.6)	Horizontal girth of the torso measured at axilla. Subject stands erect with arms hanging freely downward.				X
55	Underbust girth (ISO 8559-1:2017, 5.3.8)	Horizontal girth of the body at the under bust level (level directly below breast). Subject stands erect with arms hanging freely downwards.				X
56	Mid-riff girth (ISO 8559-1:2017, 5.3.9)	Horizontal girth of the body measured at the midriff level (midway between the under-bust and waist levels). Subject stands erect with the abdomen relaxed.				X
57	Waist circumference (EN ISO 7250-1:2017, 6.4.11 – Waist girth (ISO 8559-1:2017, 5.3.10)	Horizontal circumference of the trunk at a level midway between the lowest ribs and the upper iliac crest. Subject stands fully erect with feet together and is asked to relax the abdominal muscles.			X	X
58	Hip girth (ISO 8559-1:2017, 5.3.13)	Horizontal girth of the body measured at the hip level (level of the greatest projection at the back of the body – buttocks). Subject stands erect with feet together with the abdomen relaxed.			X	X
59	Upper arm depth (Childdata: 56)	The horizontal depth (anterior-posterior or front to back) of the right arm, midway between the shoulder and elbow. The subject stands erect, arms hanging at sides with palms in.				X

NAME		DESCRIPTION	IMAGE	0-1 y.o.	1-3 y.o.	4-16 y.o.
60	Lower arm breadth (Childata: 65)	The maximum breadth of the right forearm at the level of the maximum circumference. The subject stands erect, arms hanging at sides with palms in.				X
61	Wrist breadth (Childata: 67)	The maximum breadth of the wrist across the level of the ends of the forearm bones (the ulna and radius).				X
62	Wrist depth (Childata: 68)	The minimum horizontal depth (medio-lateral or front to back) of the right wrist above the protrusion of the wrist (the distal ulna styloid process). The subject stands erect, arms hanging at sides with palms in.				X
63	Upper arm length (shoulder to elbow, elbow bent) (ISO 8559-1:2017, 5.4.14)	Distance from the shoulder point to the elbow point (olecranon). Subject stands erect with the shoulders relaxed and fist placed on the hip bone.				X
64	Outer arm length (ISO 8559-1:2017, 5.7.8)	(*) Distance from the shoulder point, over the elbow (olecranon), to the wrist point (the far end of the prominent wrist bone at the little finger side), following the surface. Calculation: Back neck point to wrist length (ISO 8559-1:2017, 5.4.17) minus 50% of the shoulder width (through back neck point) (ISO 8559 1:2017, 5.4.3). (* This definition is an adaptation to provide a more accurate description of the measurement itself.			X	X
65	Back neck point to wrist length (ISO 8559-1:2017, 5.4.17)	Distance across the shoulder and down the arm from the back-neck point over the shoulder point and the elbow point to the wrist point. Subject stands erect with the arms hanging freely downward.				X
66	Underarm length (ISO 8559-1:2017, 5.4.16)	Distance between the armpit front fold point and palm side of the wrist at a level of the wrist point. Subject stands erect with the arm abducted to form a 20° angle with the side of the body with the palm facing the body.				X





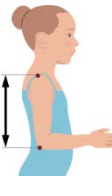


NAME		DESCRIPTION	IMAGE	0-1 y.o.	1-3 y.o.	4-16 y.o.
67	Elbow – wrist length (EN ISO 7250-1:2017, 6.4.3)	Horizontal distance from olecranon to ulnar stylium. Subject sits or stands erect, with the upper arms hanging freely downwards, and the forearms horizontal.				X
68	Forearm-fingertip length (EN ISO 7250-1:2017, 6.4.6)	Horizontal distance from olecranon (back of the elbow) to the tip of the middle finger, with the elbow bent at right angles. Subject sits or stands erect with upper arm hanging downwards, forearm horizontal and hand extended.				X
69	Armscye girth (ISO 8559-1:2017, 5.3.15)	Girth of the arm scye measured from, and to, the shoulder point passing under the arm. Subject stands erect with the arms hanging freely downward.				X
70	Upper arm circumference at armpit (Childata: 58)	The circumference of the arm at the level of the armpit is measured such that the plane of the circumference is horizontal when the arm hangs relaxed. The subject stands erect with arms hanging at sides.				X
71	Upper arm girth (ISO 8559-1:2017, 5.3.16) – (Childata: 57)	Girth of the upper arm measured midway between the shoulder point and elbow point. Subject stands erect with arms abducted to form a 20° angle with the side of the body.			X	X
72	Elbow girth (ISO 8559-1:2017, 5.3.17)	Girth of the arm at the elbow point. Subject stands erect with the arms hanging freely downward.				X
73	Lower arm circumference (Childata: 66)	The maximum circumference of the right forearm. The subject stands erect, arms hanging at sides.				X
74	Wrist circumference (EN ISO 7250-1:2017, 6.4.12 – ISO 8559-1:2017, 5.3.19)	Minimum circumference of wrist at the level of the radial styloid, with the hand outstretched. The tape passes just distal to the ulnar styloid. Subject holds forearm horizontal with hand outstretched and fingers extended.				X






NAME		DESCRIPTION	IMAGE	0-1 y.o.	1-3 y.o.	4-16 y.o.
75	Outside leg length (ISO 8559-1:2017, 5.4.22)	Distance down the side of the body from the waist level following the contour to the hip level, the vertically to the ground. Subject stands erect with feet together and arms abducted to form a 20° angle with the side of the body.				X
76	Thigh length (ISO 8559-1:2017, 5.7.5)	Vertical distance between the inside leg level and the center point of knee cap. Calculation: Inside leg height (5.1.15) minus knee height (5.1.6)				X
77	Knee height, standing (ISO 8559-1:2017, 5.1.16)	Vertical distance from the center point of the knee cap to the ground. Subject stands erect with feet together.			X	X
78	Tibiale height (EN ISO 7250-1:2017, 6.1.8)	Vertical distance from the floor to the tibiale. Subject stands fully erect with feet together.				X
79	Calf height (at maximum circumference) (Childata: 126)	The vertical distance from the standing surface to the right calf at the level of the calf circumference measurement. The subject stands erect with feet together and weight evenly distributed.				X
80	Upper thigh depth (Childata: 116)	The horizontal depth (anterior-posterior or front to back) of the right thigh at the level of the gluteal furrow (the lowest curve of the bottom). The subject stands erect, with feet together, weight evenly distributed.				X
81	Calf depth (Childata: 127)	The horizontal depth (anterior-posterior or front to back) of the right calf at the level of the maximum circumference measured. The subject stands erect with feet together, weight evenly distributed.				X





NAME		DESCRIPTION	IMAGE	0-1 y.o.	1-3 y.o.	4-16 y.o.
82	Thigh circumference (EN ISO 7250-1:2017, 6.4.13) – Thigh girth (ISO 8559-1:2017, 5.3.20)	Maximum horizontal circumference of the thigh. Subject stands erect with legs slightly apart. Measurement is taken by passing the tape horizontally around the thigh at its maximum circumference, usually just below the gluteal fold.				X
83	Mid-thigh girth (ISO 8559-1:2017, 5.3.21)	Horizontal girth of the thigh measured midway between the inside leg level and the center of knee cap. Subject stands erect with legs shoulder width apart.				X
84	Knee girth (ISO 8559-1:2017, 5.3.22)	Horizontal girth of the knee at the level of the centre point of knee-cap. Subject stands erect with feet shoulder width apart.			X	X
85	Lower knee girth (ISO 8559-1:2017, 5.3.23)	Horizontal girth of the lower leg just below the patella (knee-cap). Subject stands erect with legs shoulder width apart.				X
86	Calf circumference (EN ISO 7250-1:2017, 6.4.14 – ISO 8559-1:2017, 5.3.24)	Maximum horizontal circumference of the calf. The subject stands erect. Measurement is taken by passing the tape horizontally around the maximum circumference of the calf.				X

V.7 Sitting

Table 9 – Sitting measurements.


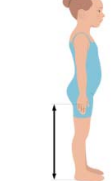
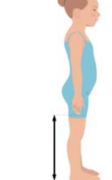
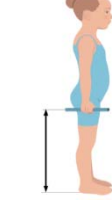
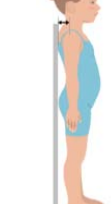


NAME		DESCRIPTION	IMAGE	0-1 y.o.	1-3 y.o.	4-16 y.o.
1	Sitting height (EN ISO 7250-1:2017, 6.2.1)	Vertical distance from a horizontal sitting surface to the highest point of the head (vertex). Subject sits fully erect with the feet supported so that the femora are horizontal and parallel to each other. Head is oriented in the Frankfurt plane.			X	X
2	Eye height, sitting (EN ISO 7250-1:2017, 6.2.2)	Vertical distance from a horizontal sitting surface to the outer corner of the eye (ectocanthus). Subject sits fully erect with the feet supported so that the femora are horizontal and parallel to each other. Head is oriented in the Frankfurt plane.			X	X
3	Cervical height, sitting (EN ISO 7250-1:2017, 6.2.3) – Back neck height, sitting (ISO 8559-1:2017, 5.1.18)	Vertical distance from a horizontal sitting surface to the Cervicale. Subject sits fully erect with the feet supported so that the femora are horizontal and parallel to each other. The head is oriented in the Frankfurt plane.				X
4	Shoulder height, sitting (EN ISO 7250-1:2017, 6.2.4)	Vertical distance from a horizontal sitting surface to the acromion. Subject sits fully erect with the feet supported so that the femora are horizontal and parallel to each other. Shoulders are relaxed, with upper arms hanging freely.			X	X
5	Shoulder- elbow length (EN ISO 7250-1:2017, 6.2.6)	Vertical distance from acromion to the bottom of the elbow bent at a right angle with the forearm horizontal. Subject stands, or sits erect with the feet supported so that the femora are horizontal and parallel to each other. Upper arms hang freely downwards and forearms are horizontal.				X
6	Elbow height, sitting (EN ISO 7250-1:2017, 6.2.5)	Vertical distance from a horizontal sitting surface to the lowest bony point of the elbow bent at a right angle with the forearm horizontal. Subject sits fully erect with the feet supported so that the femora are horizontal and parallel to each other. Upper arms hang freely downwards and forearms are horizontal.			X	X
7	Hip breadth, sitting (EN ISO 7250-1:2017, 6.2.10)	Breadth of the body measured across the widest portion of the hips. Subject sits fully erect with the feet supported so that the femora are horizontal, but the feet and knees are together. Measurement is taken without pressing into the flesh of the hips.			X	X

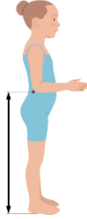
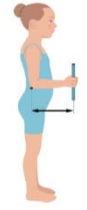

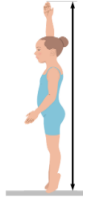
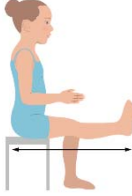

NAME	DESCRIPTION	IMAGE	0-1 y.o.	1-3 y.o.	4-16 y.o.	
8	Thigh breadth (maximum when seated) (Childata: 114)	The maximum breadth across the thighs parallel to the seated surface is measured. The subject sits erect with knees together and at 90 degrees.				X
9	Knee breadth, sitting (Childata: 122)	The distance across the right knee at the level of the condyles of the upper leg is measured. The subject sits erect with hips and knees at right angles.				X
10	Abdominal depth, sitting (EN ISO 7250-1:2017, 6.2.14)	Maximum depth of the abdomen whilst sitting. Subject sits fully erect, with the feet supported so that the femora are horizontal and parallel to each other and with the muscles of the abdomen relaxed.				X
11	Buttock-abdomen depth, sitting (EN ISO 7250-1:2017, 6.2.16)	Projected maximum horizontal depth of the lower torso between the maximum anterior protrusion of the abdomen and the maximum posterior protrusion of the buttock. Subject sits fully erect with the feet supported so that the femora are horizontal and parallel to each other with the rearmost point of the buttocks touching the surface of a vertical panel. Distance is measured from the vertical panel to the maximum anterior protrusion of the abdomen.			X	X
12	Buttock-popliteal length, sitting (seat depth) (EN ISO 7250-1:2017, 6.4.7)	Horizontal distance from the hollow of the knee to the rearmost point of the buttock. Subject sits fully erect with the feet supported so that the femora are horizontal and parallel to each other and the sitting surface extending as far as possible into the hollow of the knee. The position of the rearmost point of the buttock is vertically projected onto the sitting surface by means of a measuring cube which touches the buttocks. Distance is measured from the measuring block to the forward edge of the sitting surface.			X	X

NAME		DESCRIPTION	IMAGE	0-1 y.o.	1-3 y.o.	4-16 y.o.
13	Buttock-knee length, sitting (EN ISO 7250-1:2017, 6.4.8)	Horizontal distance from the foremost point of the knee-cap to the rearmost point of the buttock. Subject sits fully erect with the feet supported so that the femora are horizontal and parallel to each other. The position of the rearmost point of the buttock is vertically projected onto the sitting surface by means of a measuring block which touches the buttock. Distance is measured from the measuring block to the foremost point of the knee-cap			X	X
14	Thigh clearance, (depth) sitting (EN ISO 7250-1:2017, 6.2.12 - Childdata: 115)	Vertical distance from the sitting surface to the highest point on the thigh. Subject sits erect with knees bent at right angles, supporting the feet flat on the floor.			X	X
15	Knee height, sitting (EN ISO 7250-1:2017, 6.2.13)	Vertical distance from the floor to the highest point of the superior border of the patella (suprapatella, sitting). Subject sits erect with knees bent at right angles, supporting the feet flat on the floor.			X	X
16	Popliteal height, sitting (EN ISO 7250-1:2017, 6.2.11)	Vertical distance from the foot-rest surface to the lower surface or the thigh immediately behind the knee, bent at right angles. Subject sits with the foot placed on a raised platform so the thigh and lower legs are at right angles during measurement. The movable arm or the measuring instrument is pushed gently against the tendon of the relaxed biceps femoris muscle.			X	X

V.8 Reach

Table 10 – Reach measurements.

NAME	DESCRIPTION	Image	0-1 y.o.	1-3 y.o.	4-16 y.o.
1	<p>Span (Childdata: 145)</p> <p>The maximum horizontal distance between the fingertips when both arms are stretched out sideways.</p>			X	X
2	<p>Knuckle height (from floor) (Childdata: 70)</p> <p>The vertical distance from the floor to the proximal (first or largest) knuckle of the middle finger is measured while the subject stands erect with arms at the sides.</p>				X
3	<p>Middle fingertip height (from floor) (Childdata: 92)</p> <p>The vertical distance from the floor to the tip of the middle finger (dactylion) is measured while the arm is held at the side of the body.</p>				X
4	<p>Fist (grip axis) height (EN ISO 7250-1:2017, 6.4.5)</p> <p>Vertical distance from the floor to the grip axis of the fist. Subject stands fully erect with feet together, shoulders relaxed, arms hanging freely downwards. Hand holds the measuring rod in the sagittal plane with a horizontal grip axis.</p>				X
5	<p>Wall-acromion distance (EN ISO 7250-1:2017, 6.4.1)</p> <p>Horizontal distance from a vertical surface to the acromion. Subject stands with shoulder blades in firm contact with a vertical surface, and arms hanging relaxed at the side. Reliable results may be difficult to obtain, especially in cases of large buttocks, or much muscle mass or body fat on the back.</p>				X
6	<p>Arm length to grip (Childdata: 54)</p> <p>The distance from the acromion (the most lateral edge of the spine of the scapula) to the center of an object gripped in the hand, arm held out straight in front of the body and with the elbow and wrist straight.</p>				X
7	<p>Grip reach, (standing) (EN ISO 7250-1:2017, 6.4.2) – (Childdata: 140)</p> <p>Horizontal distance from a vertical surface to the grip axis of the hand while the subject leans both shoulder blades against the vertical surface. Subject stands fully erect with shoulder blades firmly against the vertical surface, arm fully extended horizontally. Hand holds measuring rod with grip axis vertical. Reliable results may be difficult to obtain, especially in cases of large buttocks, or much muscle mass or body fat on the back.</p>			X	X

8	Elbow height (from floor) (EN ISO 7250-1:2017, 6.1.5)	Vertical distance from the floor to the lowest bony point of the bent elbow. Subject stands fully erect with feet together. Upper arm hangs freely downwards, with forearm flexed at right angle to it.			X	X
9	Elbow – grip length (EN ISO 7250-1:2017, 6.4.4) – (Childata: 64)	The horizontal distance from olecranon (back of the elbow) to grip axis. The subject stands with arms at sides and elbows flexed to 90 degrees.				X
10	Overhead reach to grip (standing) (Childata: 136)	The distance from the floor to the centre of the grip device is measured. The subject stands erect with feet together and with their right side against a wall. The right arm is extended to maximum vertical reach while grasping the handle of a grip device in the right hand.				X
11	Overhead reach to fingertip (on tiptoes) (Childata: 138)	The vertical distance to the maximum overhead reach with the fingertips is measured with the subject with the both feet on the floor, standing on tiptoe and stretching up with the left arm only.				X
12	Leg length, buttock to sole (sitting) (Childata: 109)	The distance from the most rearward part of the buttocks (against the backrest) to the sole of the right foot. The subject sits erect with thighs supported, right leg extended and foot at right angles to the leg.				X
13	Overhead reach to grip (sitting) (Childata: 137)	(*) The distance from the sitting surface to the centre of the grip device. The subject sits so that the hips and knees are at 90 degrees. The subject grasps the handle of a grip device in the right hand extending the right arm to maximum vertical reach. Calculation: Overhead reach to grip, standing minus the difference between Height (stature) in standing and sitting positions. (*) This definition is an adaptation to provide a more accurate description of the measurement itself.				X

VI Anthropometric measurements by age range

VI.1 General

This annex specifies the set of measurements that are relevant to the project, arranged by age ranges. The columns Traditional and Digital indicate:

- Traditional: the participant obtains the measurement using traditional methods.
- Digital: the participant provides the 3D scan and images of the hands to TPL1. TPL1 processes the 3D scan and images in order to obtain the measurement. The data processing is centralised in order to avoid the bias related to data processing.

VI.2 Age range 0 to 1 year old

Table 11 – Measurements for babies between 0 to 1-year-old.

GROUP OF MEASUREMENT	NAME	Traditional	Digital
Head	1 Head breadth (EN ISO 7250-1:2017, 6.3.10 - Childata: 8)	X	
	2 Bitragion arc of the head (EN ISO 7250-1:2017, 6.3.14)	X	
	3 Head circumference (EN ISO 7250-1:2017, 6.3.12) / Head girth (ISO 8559-1:2017, 5.3.1) – Childata: 10	X	
	4 Sagittal arc of the head (EN ISO 7250-1:2017, 6.3.13)	X	
	5 Head length (EN ISO 7250-1:2017, 6.3.9) – Childata: 9	X	
Hand	1 Hand length (to wrist crease) (EN ISO 7250-1:2017, 6.3.1 – ISO 8559-1:2017, 5.5.2)	X	
	2 Hand breadth at metacarpals (EN ISO 7250-1:2017, 6.3.3)	X	
	3 Hand girth (ISO 8559-1:2017, 5.5.1)	X	
	4 Hand clearance (maximum aperture) (Childata: 78)	X	
	5 Maximum grip diameter (between thumb and index finger) (Childata: 79)	X	
Foot	1 Foot length (EN ISO 7250-1:2017, 6.3.7 – ISO 8559:2017, 5.5.5)	X	
	2 Foot breadth (EN ISO 7250-1:2017, 6.3.8)	X	
	3 Foot girth (ISO 8559-1:2017, 5.5.7)	X	
	4 Ankle girth (ISO 8559-1:2017, 5.3.26)	X	
	5 Heel to instep girth	X*	
	6 Foot height (Childata:132)	X*	
	7 Height of 1 st toe	X*	
Supine	1 Body mass (Weight) (EN ISO 7250-1:2017, 6.1.1 – ISO 8559-1:2017, 5.6.1)	X	
	2 Recumbent length (ISO 8559-1:2017, 5.1.2)	X	
	3 Shoulder height (supine) (EN ISO 7250-1:2017, 6.1.4*)	X	
	4 Sitting height (supine) / Crown to rump (supine) (Childata: 5)	X	
	5 Leg length, buttock to sole (supine) (Childata: 110)	X	
	6 Hip depth (supine) (Childata: 49)	X	
	7 Buttock to popliteal length (supine) (EN ISO 7250-1:2017, 6.4.7*)	X	
	8 Lower leg length, popliteal to sole (supine) (Childata: 125)	X	
	9 Lower leg length, knee to sole (supine) (Childata: 124)	X	

	10	Waist breadth (in infants) (Childata: 39)	X**	
	11	Hip breadth (maximum in infants) (Childata: 46)	X**	
	12	Mid-thigh girth (ISO 8559-1:2017, 5.3.21*)	X	
	13	Maximum reach when the baby is lying	X	
Total	30			

*Inclusion of the measurement has to be discussed with the experts from CEN-TC 122.

**Cylindric body of babies causes redundancy between these measurements. Which of the measurement should be included has to be discussed with the experts from CEN-TC 122.

VI.3 Age range: 1 to 3 years old

Table 12 – Measurements for children between 1 to 3 years old.

GROUP OF MEASUREMENT		NAME	Traditional	Digital
Head	1	Head breadth (EN ISO 7250-1:2017, 6.3.10 - Childata: 8)	X	X
	2	Ear to ear (bitragion) breadth (Childata: 13)		X
	3	Face breadth (bizygomatic or cheekbones) (Childata: 14)		X
	4	Face breadth (brow ridges) (Childata: 15)		X
	5	Jaw breadth (Childata: 16)		X
	6	Eye separation (Interpupilar distance) (Childata: 21)	X	
	7	Neck breadth (Childata: 25)		X
	8	Bitragion arc of the head (EN ISO 7250-1:2017, 6.3.14)	X	X
	9	Neck circumference (EN ISO 7250-1: 2017, 6.4.9) – Neck girth (ISO 8559-1:2017, 5.3.2)		X
	10	Neck-base girth (ISO 8559-1:2017, 5.3.3)		X
	11	Head circumference (EN ISO 7250-1:2017, 6.3.12) / Head girth (ISO 8559-1:2017, 5.3.1) – Childata: 10	X	X
	12	Sagittal arc of the head (EN ISO 7250-1:2017, 6.3.13)	X	X
	13	Head length (EN ISO 7250-1:2017, 6.3.9) – Childata: 9		X
	14	Maximum head diameter (chin to back of head) (Childata: 12)		X
	15	Head height (Chin to Vertex) (Childata: 11)		X
	16	Face height (Childata: 17)		X
	17	Face length (menton-sellion) (EN ISO 7250-1:2017, 6.3.11) – Childata: 18	X	X
	18	Mouth breadth (Childata: 22)	X	
	19	Mouth opening (between incisors) (Childata: 23)	X	
	20	Mouth breadth (fully open)	X	
Hand	1	Hand length (to wrist crease) (EN ISO 7250-1:2017, 6.3.1 – ISO 8559-1:2017, 5.5.2)	X	X
	2	Palm length (EN ISO 7250-1:2017, 6.3.2 – ISO 8559-1:2017, 5.5.3)		X
	3	Hand length (to thumb crotch) (Childata: 72)		X
	4	Hand breadth at metacarpals (EN ISO 7250-1:2017, 6.3.3)	X	X
	5	Hand breadth at thumb (Childata: 75)	X	
	6	Hand girth (ISO 8559-1:2017, 5.5.1)	X	
	7	Thumb breadth at distal joint (Childata: 85)		X
	8	Index finger breadth, distal (EN ISO 7250-1:2017, 6.3.6)	X	X

	9	Index finger breadth, proximal (EN ISO 7250-1:2017, 6.3.5)		X
	10	Middle finger breadth at distal joint (Childata: 97)		X
	11	Middle finger breadth at middle joint (Childata: 98)		X
	12	Fourth finger breadth at distal joint (Childata: 103)		X
	13	Fourth finger breadth at middle joint (Childata: 104)		X
	14	Little finger breadth at distal joint (Childata: 106)		X
	15	Little finger breadth at middle joint (Childata: 107)		X
	16	Thumb length (Childata: 85)		X
	17	Index finger length (EN ISO 7250-1:2017, 6.3.4)		X
	18	Middle finger length (Childata: 93)		X
	19	Fourth finger length (Childata: 102)		X
	20	Little finger length (Childata: 105)		X
	21	Thumb length (distal joint to tip)		X
	22	Index finger length (distal joint to tip)		X
	23	Index finger length (middle joint to distal joint)		X
	24	Middle finger length (distal joint to tip) (Childata: 94)		X
	25	Middle finger length (middle joint to distal joint) (Childata: 95)		X
	26	Fourth finger length (distal joint to tip)		X
	27	Fourth finger length (middle joint to distal joint)		X
	28	Little finger length (distal joint to tip)		X
	29	Little finger length (middle joint to distal joint)		X
	30	Hand clearance (maximum aperture) (Childata: 78)	X	
	31	Maximum grip diameter (between thumb and index finger) (Childata: 79)	X	
	32	Thumb diameter (minimum aperture) (Childata: 87)	X	
	33	Index finger diameter (minimum aperture) (Childata: 91)	X*	
	34	Middle finger diameter (minimum aperture) (Childata:101)	X*	
	35	Fourth finger diameter (minimum aperture)	X*	
	36	Little finger diameter (minimum aperture) (Childata: 108)	X	
Foot	1	Foot length (EN ISO 7250-1:2017, 6.3.7 – ISO 8559:2017, 5.5.5)	X	X
	2	Forefoot length		X
	3	Distance heel – 1 st metatarsal		X
	4	Distance heel – 5 th metatarsal		X
	5	Toes width		X
	6	Foot breadth (EN ISO 7250-1:2017, 6.3.8)	X	X
	7	Heel breadth (Childata: 135)		X
	8	Ankle breadth (Childata: 130)		X
	9	Toes girth		X
	10	Foot girth (ISO 8559-1:2017, 5.5.7)		X
	11	Instep girth		X
	12	Minimum leg girth (ISO 8559-1:2017, 5.3.25)		X
	13	Ankle girth (ISO 8559-1:2017, 5.3.26)		X
	14	Heel to instep girth		X
	15	Foot height (Childata:132)		X
	16	Height of 1 st toe		X
	17	Height of 1 st metatarsal		X
	18	Height of 5 th toe		X

	19	Height of 5 th metatarsal		X
	20	Instep height		X
	21	Heel height		X
	22	Outer ankle height (ISO 8559-1:2017, 5.1.17)		X
Standing	1	Body mass (Weight) (EN ISO 7250-1:2017, 6.1.1 — ISO 8559-1:2017, 5.6.1)	X	
	2	Stature (EN ISO 7250-1:2017, 6.1.2 — ISO 8559:2017, 5.1.1)	X	X
	3	Back neck height (ISO 8559-1:2017, 5.1.5)		X
	4	Crotch height (EN ISO 7250-1:2017, 6.1.7)	X	
	5	Inside leg height (ISO 8559-1:2017, 5.1.15)		X
	6	Shoulder breadth (bideltoid) (EN ISO 7250-1:2017, 6.2.8)		X
	7	Elbow to elbow breadth (EN ISO 7250-1:2017, 6.2.9)	X	
	8	Chest circumference (EN ISO 7250-1:2017, 6.4.10) - Bust girth (ISO 8559-1:2017, 5.3.4)	X	X
	9	Waist circumference (EN ISO 7250-1:2017, 6.4.11 – Waist girth (ISO 8559-1:2017, 5.3.10)		X
	10	Hip girth (ISO 8559-1 (2017): 5.3.13)	X	
	11	Outer arm length (ISO 8559-1:2017, 5.7.8)		X
	12	Upper arm girth (ISO 8559-1:2017, 5.3.16) – (Childata: 57)		X
	13	Knee height, standing (ISO 8559-1:2017, 5.1.16)		X
	14	Knee girth (ISO 8559-1:2017, 5.3.22)		X
Sitting	1	Sitting height (EN ISO 7250-1:2017, 6.2.1)	X	
	2	Eye height, sitting (EN ISO 7250-1:2017, 6.2.2)	X	
	3	Shoulder height, sitting (EN ISO 7250-1:2017, 6.2.4)	X	
	4	Elbow height, sitting (EN ISO 7250-1:2017, 6.2.5)	X	
	5	Hip breadth, sitting (EN ISO 7250-1:2017, 6.2.10)	X	
	6	Buttock-abdomen depth, sitting (EN ISO 7250-1:2017, 6.2.16)	X	
	7	Buttock-popliteal length, sitting (seat depth) (EN ISO 7250-1:2017, 6.4.7)	X	
	8	Buttock-knee length, sitting (EN ISO 7250-1:2017, 6.4.8)	X	
	9	Thigh clearance, (depth) sitting (EN ISO 7250-1:2017, 6.2.12 - Childata: 115)	X	
	10	Knee height, sitting (EN ISO 7250-1:2017, 6.2.13)	X	
	11	Popliteal height, sitting (EN ISO 7250-1:2017, 6.2.11)	X	
Reach	1	Span (Childata: 145)	X	
	2	Grip reach, (standing) (EN ISO 7250-1:2017, 6.4.2) – (Childata: 140)	X	
	3	Elbow height (from floor) (EN ISO 7250-1:2017, 6.1.5)	X	
Total	107			

*Inclusion of the measurement has to be discussed with the experts from CEN-TC 122.

VI.4 Age range: 4 to 16 years old

Table 13 – Measurements for children between 4 to 16 years old.

GROUP OF MEASUREMENT		NAME	Traditional	Digital
Head	1	Head breadth (EN ISO 7250-1:2017, 6.3.10 - Childata: 8)	X	X
	2	Ear to ear (bitragion) breadth (Childata: 13)		X
	3	Face breadth (bizygomatic or cheekbones) (Childata: 14)		X
	4	Face breadth (brow ridges) (Childata: 15)		X
	5	Jaw breadth (Childata: 16)		X
	6	Eye separation (Interpupilar distance) (Childata: 21)	X	
	7	Neck breadth (Childata: 25)		X
	8	Bitragion arc of the head (EN ISO 7250-1:2017, 6.3.14)	X	X
	9	Neck circumference (EN ISO 7250-1: 2017, 6.4.9) – Neck girth (ISO 8559-1:2017, 5.3.2)		X
	10	Neck-base girth (ISO 8559-1:2017, 5.3.3)		X
	11	Head circumference (EN ISO 7250-1:2017, 6.3.12) / Head girth (ISO 8559-1:2017, 5.3.1) – Childata: 10	X	X
	12	Sagittal arc of the head (EN ISO 7250-1:2017, 6.3.13)	X	X
	13	Head length (EN ISO 7250-1:2017, 6.3.9) – Childata: 9		X
	14	Maximum head diameter (chin to back of head) (Childata: 12)		X
	15	Head height (7 th Cervicale)		X
	16	Head height (Chin to Vertex) (Childata: 11)		X
	17	Face height (Childata: 17)		X
	18	Face length (menton-sellion) (EN ISO 7250-1:2017, 6.3.11) – Childata: 18	X	X
	19	Mouth breadth (Childata: 22)	X	
	20	Mouth opening (between incisors) (Childata: 23)	X	
	21	Mouth breadth (fully open)	X	
Hand	1	Hand length (to wrist crease) (EN ISO 7250-1:2017, 6.3.1 – ISO 8559-1:2017, 5.5.2)	X	X
	2	Palm length (EN ISO 7250-1:2017, 6.3.2 – ISO 8559-1:2017, 5.5.3)		X
	3	Hand length (to thumb crotch) (Childata: 72)		X
	4	Hand breadth at metacarpals (EN ISO 7250-1:2017, 6.3.3)	X	X
	5	Hand breadth at thumb (Childata: 75)	X	
	6	Hand girth (ISO 8559-1:2017, 5.5.1)	X	
	7	Thumb breadth at distal joint (Childata: 85)		X
	8	Index finger breadth, distal (EN ISO 7250-1:2017, 6.3.6)	X	X
	9	Index finger breadth, proximal (EN ISO 7250-1:2017, 6.3.5)		X
	10	Middle finger breadth at distal joint (Childata: 97)		X
	11	Middle finger breadth at middle joint (Childata: 98)		X
	12	Fourth finger breadth at distal joint (Childata: 103)		X
	13	Fourth finger breadth at middle joint (Childata: 104)		X
	14	Little finger breadth at distal joint (Childata: 106)		X
	15	Little finger breadth at middle joint (Childata: 107)		X
	16	Thumb length (Childata: 85)		X
	17	Index finger length (EN ISO 7250-1:2017, 6.3.4)		X
	18	Middle finger length (Childata: 93)		X
	19	Fourth finger length (Childata: 102)		X
	20	Little finger length (Childata: 105)		X

	21	Thumb length (distal joint to tip)		X
	22	Index finger length (distal joint to tip)		X
	23	Index finger length (middle joint to distal joint)		X
	24	Middle finger length (distal joint to tip) (Childata: 94)		X
	25	Middle finger length (middle joint to distal joint) (Childata: 95)		X
	26	Fourth finger length (distal joint to tip)		X
	27	Fourth finger length (middle joint to distal joint)		X
	28	Little finger length (distal joint to tip)		X
	29	Little finger length (middle joint to distal joint)		X
	30	Hand depth (Childata: 76)	X	
	31	Hand clearance (maximum aperture) (Childata: 78)	X	
	32	Middle finger depth at distal joint (Childata: 99)	X	
	33	Maximum grip diameter (between thumb and index finger) (Childata: 79)	X	
	34	Thumb diameter (minimum aperture) (Childata: 87)	X	
	35	Index finger diameter (minimum aperture) (Childata: 91)	X*	
	36	Middle finger diameter (minimum aperture) (Childata:101)	X*	
	37	Fourth finger diameter (minimum aperture)	X*	
	38	Little finger diameter (minimum aperture) (Childata: 108)	X	
Foot	1	Foot length (EN ISO 7250-1:2017, 6.3.7 – ISO 8559:2017, 5.5.5)	X	X
	2	Forefoot length		X
	3	Distance heel – 1 st metatarsal		X
	4	Distance heel – 5 th metatarsal		X
	5	Toes width		X
	6	Foot breadth (EN ISO 7250-1:2017, 6.3.8)	X	X
	7	Heel breadth (Childata: 135)		X
	8	Ankle breadth (Childata: 130)		X
	9	Toes girth		X
	10	Foot girth (ISO 8559-1:2017, 5.5.7)		X
	11	Instep girth		X
	12	Minimum leg girth (ISO 8559-1:2017, 5.3.25)		X
	13	Ankle girth (ISO 8559-1:2017, 5.3.26)		X
	14	Heel to instep girth		X
	15	Foot height (Childata:132)		X
	16	Height of 1 st toe		X
	17	Height of 1 st metatarsal		X
	18	Height of 5 th toe		X
	19	Height of 5 th metatarsal		X
	20	Instep height		X
	21	Heel height		X
	22	Outer ankle height (ISO 8559-1:2017, 5.1.17)		X
Standing	1	Body mass (Weight) (EN ISO 7250-1:2017, 6.1.1 — ISO 8559-1:2017, 5.6.1)		X
	2	Stature (EN ISO 7250-1:2017, 6.1.2 — ISO 8559:2017, 5.1.1)	X	X
	3	Eye height (from floor) (EN ISO 7250-1:2017, 6.1.3)		X
	4	Chin height (ISO 8559-1:2017, 5.1.3)		X
	5	Back neck height (ISO 8559-1:2017, 5.1.5)		X

6	Shoulder height (EN ISO 7250-1:2017, 6.1.4)		X
7	Chest height at armpit (Childata: 32)		X
8	Iliac spine height, standing (EN ISO 7250-1:2017, 6.1.6)		X
9	Waist height (ISO 8559-1:2017, 5.1.10)		X
10	Upper hip height (ISO 8559-1:2017, 5.1.11)		X
11	Top hip height (ISO 8559-1:2017, 5.1.12)		X
12	Maximum hip girth height (ISO 8559-1:2017, 5.1.14) – Buttock height at maximum depth (Childata: 51)		X
13	Crotch height (EN ISO 7250-1:2017, 6.1.7)	X	
14	Inside leg height (ISO 8559-1:2017, 5.1.15)		X
15	Buttock height at gluteal furrow (Childata: 52)		X
16	Torso height (ISO 8559-1:2017, 5.7.3)		X
17	Back neck point to ground (contoured) (ISO 8559-1:2017, 5.4.23)		X
18	Back neck point to knee (ISO 8559-1:2017, 5.7.2)		X
19	Diagonal trunk girth (ISO 8559-1:2017, 5.3.27)		X
20	Centre trunk length (ISO 8559-1:2017, 5.3.28)		X
21	Shoulder breadth (bideltoid) (EN ISO 7250-1:2017, 6.2.8)		X
22	Shoulder breadth (biacromial) (EN ISO 7250-1:2017, 6.2.7) – (Childata: 31)	X	X
23	Elbow to elbow breadth (EN ISO 7250-1:2017, 6.2.9)	X	
24	Shoulder slope (ISO 8559-1:2017, 5.6.2)		X
25	Back shoulder width (ISO 8559-1:2017, 5.4.2)		X
26	Shoulder length (ISO 8559-1:2017, 5.4.1)		X
27	Back width (armpit level)		X
28	Across back width (ISO 8559-1:2017, 5.4.4)		X
29	Back neck point to waist (ISO 8559-1:2017, 5.4.5)		X
30	Scye depth length (ISO 8559-1:2017, 5.4.6)		X
31	Back neck point to bust point (ISO 8559-1:2017, 5.4.12)		X
32	Back neck point to waist level (ISO 8559-1:2017, 5.4.13)		X
33	Bust points around neck		X
34	Side neck point to bust point (ISO 8559-1:2017, 5.4.10)		X
35	Side neck point to waist level (ISO 8559-1:2017, 5.4.11)		X
36	Front width (armpit level)		X
37	Chest depth, standing (EN ISO 7250-1:2017, 6.1.9 – ISO 8559-1:2017, 5.2.5)		X
38	Thorax depth (ISO 7250-1 (2017): 6.2.15) - Bust depth (ISO 8559-1 (2017): 5.2.6)		X
39	Body depth, standing (EN ISO 7250-1:2017, 6.1.10)		X
40	Abdomen/hip depth (ISO 8559-1:2017, 5.2.7)		X
41	Straight body rise (ISO 8559-1:2017, 5.7.4)		X
42	Total crotch length (ISO 8559-1:2017, 5.4.18)		X
43	Front crotch length (ISO 8559-1:2017, 5.4.19)		X
44	Back crotch length (ISO 8559-1:2017, 5.4.20)		X
45	Side waist to hip (ISO 8559-1:2017, 5.4.21)		X
46	Chest breadth at armpit (Childata: 33)		X
47	Chest breadth, standing (EN ISO 7250-1:2017, 6.1.11)		X
48	Bust point width (ISO 8559-1:2017, 5.2.3)		X
49	Chest breadth at nipples (Childata: 34)		X

	50	Waist breadth		X
	51	Hip breadth (trochanter) (Childata: 47)		X
	52	Hip Breadth, standing (EN ISO 7250-1:2017, 6.1.12)		X
	53	Chest circumference (EN ISO 7250-1:2017, 6.4.10) - Bust girth (ISO 8559-1:2017, 5.3.4)	X	X
	54	Chest girth (at axilla) (ISO 8559-1:2017, 5.3.6)		X
	55	Underbust girth (ISO 8559-1:2017, 5.3.8)		X
	56	Mid-riff girth (ISO 8559-1:2017, 5.3.9)		X
	57	Waist circumference (EN ISO 7250-1:2017, 6.4.11 – Waist girth (ISO 8559-1:2017, 5.3.10)		X
	58	Hip girth (ISO 8559-1 (2017): 5.3.13)		X
	59	Upper arm depth (Childata: 56)		X
	60	Lower arm breadth (Childata: 65)		X
	61	Wrist breadth (Childata: 67)		X
	62	Wrist depth (Childata: 68)		X
	63	Upper arm length (shoulder to elbow, elbow bent) (ISO 8559-1:2017, 5.4.14)		X
	64	Outer arm length (ISO 8559-1:2017, 5.7.8)		X
	65	Back neck point to wrist length (ISO 8559-1:2017, 5.4.17)		X
	66	Underarm length (ISO 8559-1:2017, 5.4.16)		X
	67	Elbow – wrist length (EN ISO 7250-1:2017, 6.4.3)		X
	68	Forearm-fingertip length (EN ISO 7250-1:2017, 6.4.6)		X
	69	Armscye girth (ISO 8559-1:2017, 5.3.15)		X
	70	Upper arm circumference at armpit (Childata: 58)		X
	71	Upper arm girth (ISO 8559-1:2017, 5.3.16) – (Childata: 57)		X
	72	Elbow girth (ISO 8559-1:2017, 5.3.17)		X
	73	Lower arm circumference (Childata: 66)		X
	74	Wrist circumference (EN ISO 7250-1:2017, 6.4.12 – ISO 8559-1:2017, 5.3.19)		X
	75	Outside leg length (ISO 8559-1:2017, 5.4.22)		X
	76	Thigh length (ISO 8559-1:2017, 5.7.5)		X
	77	Knee height, standing (ISO 8559-1:2017, 5.1.16)		X
	78	Tibiale height (EN ISO 7250-1:2017, 6.1.8)		X
	79	Calf height (at maximum circumference) (Childata: 126)		X
	80	Upper thigh depth (Childata: 116)		X
	81	Calf depth (Childata: 127)		X
	82	Thigh circumference (EN ISO 7250-1:2017, 6.4.13) – Thigh girth (ISO 8559-1:2017, 5.3.20)		X
	83	Mid-thigh girth (ISO 8559-1:2017, 5.3.21)		X
	84	Knee girth (ISO 8559-1:2017, 5.3.22)		X
	85	Lower knee girth (ISO 8559-1:2017, 5.3.23)		X
	86	Calf circumference (EN ISO 7250-1:2017, 6.4.14 – ISO 8559-1:2017, 5.3.24)		X
Sitting	1	Sitting height (EN ISO 7250-1:2017, 6.2.1)	X	X
	2	Eye height, sitting (EN ISO 7250-1:2017, 6.2.2)		X
	3	Cervical height, sitting (EN ISO 7250-1:2017, 6.2.3) – Back neck height, sitting (ISO 8559-1:2017, 5.1.18)		X
	4	Shoulder height, sitting (EN ISO 7250-1:2017, 6.2.4)		X
	5	Shoulder- elbow length (EN ISO 7250-1:2017, 6.2.6)		X
	6	Elbow height, sitting (EN ISO 7250-1:2017, 6.2.5)		X

	7	Hip breadth, sitting (EN ISO 7250-1:2017, 6.2.10)	X	X
	8	Thigh breadth (maximum when seated) (Childata: 114)	X	
	9	Knee breadth, sitting (Childata: 122)	X	
	10	Abdominal depth, sitting (EN ISO 7250-1:2017, 6.2.14)	X	X
	11	Buttock-abdomen depth, sitting (EN ISO 7250-1:2017, 6.2.16)		X
	12	Buttock-popliteal length, sitting (seat depth) (EN ISO 7250-1:2017, 6.4.7)	X	X
	13	Buttock-knee length, sitting (EN ISO 7250-1:2017, 6.4.8)		X
	14	Thigh clearance, (depth) sitting (EN ISO 7250-1:2017, 6.2.12 - Childata: 115)	X	X
	15	Knee height, sitting (EN ISO 7250-1:2017, 6.2.13)		X
	16	Popliteal height, sitting (EN ISO 7250-1:2017, 6.2.11)		X
Reach	1	Span (Childata: 145)	X	
	2	Knuckle height (from floor) (Childata: 70)		X
	3	Middle fingertip height (from floor) (Childata: 92)		X
	4	Fist (grip axis) height (EN ISO 7250-1:2017, 6.4.5)	X	
	5	Wall-acromion distance (EN ISO 7250-1:2017, 6.4.1)	X	
	6	Arm length to grip (Childata: 54)	X	
	7	Grip reach, (standing) (EN ISO 7250-1:2017, 6.4.2) – (Childata: 140)	X	
	8	Elbow height (from floor) (EN ISO 7250-1:2017, 6.1.5)	X	X
	9	Elbow – grip length (EN ISO 7250-1:2017, 6.4.4) – (Childata: 64)	X	
	10	Overhead reach to grip (standing) (Childata: 136)	X	
	11	Overhead reach to fingertip (on tiptoes) (Childata: 138)	X	
	12	Leg length, buttock to sole (sitting) (Childata: 109)	X	
	13	Overhead reach to grip (sitting) (Childata: 137)	X	
Total	197			

*Inclusion of the measurement has to be discussed with the experts from CEN-TC 122.

VII Equipment

VII.1 General

Measuring equipment has been defined according to the references of the measurements in the standards EN ISO 7250-1:2017, ISO 8559-1:2017 and ISO 20685-1-2018 and the protocols include both traditional and digital measurements from body scanners.

VII.2 Traditional instruments


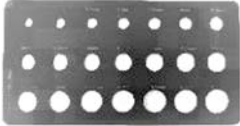

The instruments that are recommended for taking traditional measurements of the body, head, hand and foot are described in the following table:

Table 14. Traditional Instruments.

INSTRUMENT	IMAGE	SPECIFICATIONS
Stadiometer		Measuring range: 0-2500 mm Accuracy: 1mm
Scale		Measuring range: 0-250 Kg Accuracy: 100 gr
Infantometer		Measuring range: 0 – 990 mm Accuracy: 1mm
Baby's Weight Scale		Measuring range: 0-20 Kg Accuracy: 200 gr
Anthropometer		Measuring range: 0-2100 mm (Different configuration of components) Accuracy: 1mm

<p>Tape measure</p>		<p>Measuring range: 0-2000 mm Accuracy: 1mm</p>
<p>Soft Tape</p>		<p>Measuring range: 0-2000 mm Accuracy: 1mm</p>
<p>Large sliding caliper</p>		<p>Measuring range: 60-600 mm Accuracy: 1mm</p>
<p>Large sliding caliper (curved arms)</p>		<p>Measuring range: 20-600 mm Accuracy: 1mm</p>
<p>Small sliding caliper</p>		<p>Measuring range: 0-200 mm Accuracy: 1mm</p>
<p>Abdominal Caliper</p>		<p>Model 1: Measuring range: 0-360 mm Accuracy: 1mm Model 2: Measuring range: 0-600 mm Accuracy: 1mm</p>
<p>Segmometer</p>		<p>Measuring range: 0-3000 mm Accuracy: 1mm</p>



<p>Segmometer (Unequal arms)</p>		<p>Measuring range: 0-3000 mm Accuracy: 1mm</p>
<p>Sliding caliper (Martin type)</p>		<p>Measuring range: 0-200 mm Accuracy: 1mm</p>
<p>Sliding caliper (Poech type)</p>		<p>Measuring range: 0-250 mm Accuracy: 0.1mm</p>
<p>Spreading caliper</p>		<p>Measuring range: 0-300 mm Accuracy: 1mm</p>
<p>Paquimeter</p>		<p>Measuring range: 0-150 mm Accuracy: 0.1mm</p>
<p>Small height gauge</p>		<p>Measuring range: 0-200 mm Accuracy: 0.02mm</p>
<p>Grip gauge</p>		<p>Measuring range: 15 - 61.8 mm Accuracy: 1.2mm</p>

<p>Clearance gauges for hands</p>		<p>Measuring range: 0 – 300 mm Accuracy: 1.5mm</p>
<p>Clearance gauges for fingers</p>		<p>Measuring range: 5.5 - 26 mm Accuracy: 0.5mm</p>
<p>Pupilometer</p>		<p>Measuring range: 0-300 mm Accuracy: 1mm</p>

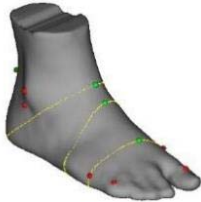
VII.3 Scanning devices

The next table shows the minimum requirements to obtain accurate measurements from scan data of head, hand, foot and body.

Table 15 – Instruments to scan the body and body parts

INSTRUMENT	REQUIREMENTS
<p data-bbox="188 808 371 837">Head scanner</p> 	<p data-bbox="422 535 579 564">Acquisition:</p> <ul style="list-style-type: none"> <li data-bbox="422 566 740 595">▪ Scanning time ≤ 10 sec <li data-bbox="422 598 683 627">▪ Resolution ≤ 1 mm <li data-bbox="422 629 852 658">▪ Density of points ≤ 30 points/cm² <li data-bbox="422 660 1082 689">▪ Scanning volume ≥ 280 (D) × 280 (W) × 350 (H) mm <li data-bbox="422 692 1342 808">▪ The use of physical landmarks producing an additional apparent volume is not recommended. In case of being used, there should be provided enough information (e.g. centre position and diameter of the semi-sphere) to remove them from the resulting surface. <li data-bbox="422 810 1326 873">▪ Occlusions should be minimised. All facial features must be visible: eyes, nose, ears, chin, lips, etc. <li data-bbox="422 875 1315 963">▪ Mesh reconstruction artefacts not representing body surface should be removed. Alternatively, actual measured points should be identified as a subset of those included in the final mesh. <li data-bbox="422 965 1315 1028">▪ Noise should be removed/filtered from the 3D data (e.g. ground surface, walls, etc.) <li data-bbox="422 1030 1155 1059">▪ Must capture body surface with all skin tones and body art. <p data-bbox="422 1061 600 1090">Output file(s):</p> <ul style="list-style-type: none"> <li data-bbox="422 1093 1235 1122">▪ Point cloud or mesh in OBJ, STL or PLY format, one file per scan <li data-bbox="422 1124 1305 1279">▪ Anatomical Landmarks (see section Fehler! Verweisquelle konnte nicht gefunden werden.) in TXT or CSV format including xyz coordinates (same coordinate system as the point-cloud/mesh) and landmark labels, one file per scan <li data-bbox="422 1281 1347 1344">▪ Estimation of the ground plane (e.g. Y = 0) and of the sitting surface plane. They can also be identified through 3 or more landmarks. <li data-bbox="422 1346 1353 1408">▪ All 3D scans and landmarks should be oriented regarding the same reference system, which must be identified (e.g. Y-up, Z-front)
<p data-bbox="188 1576 371 1606">Hand scanner</p> 	<p data-bbox="422 1458 579 1487">Acquisition:</p> <ul style="list-style-type: none"> <li data-bbox="422 1489 932 1518">▪ It must capture coloured images (RGB) <li data-bbox="422 1520 1353 1608">▪ It must include a transparent surface where the hand will be placed. On this surface, a correspondence between pixels and real magnitude (for example, millimetres) must exist. <li data-bbox="422 1610 767 1639">▪ Minimal resolution: 3 MP. <li data-bbox="422 1641 1002 1671">▪ Field of view (width x height): 21 cm x 25 cm. <li data-bbox="422 1673 906 1702">▪ Maximal distortion due to lens: < 1%. <li data-bbox="422 1704 1353 1767">▪ It must include a controlled background that contrasts with the colour of the skin. <li data-bbox="422 1769 879 1798">▪ It must incorporate its own lighting. <li data-bbox="422 1800 1353 1863">▪ The exposure of the image should be optimal, not underexposed neither overexposed. <li data-bbox="422 1865 1353 1928">▪ It must not capture sparkles, shadows or other artefacts due to external sources. <li data-bbox="422 1930 1075 1960">▪ Minimal field depth: 4cm from the measure surface.

Foot Scanner



Acquisition:

- Scanning time ≤ 6 sec,
or Scanning speed ≥ 15 mm/sec depending on the acquisition technology.
- Accuracy ≤ 1 mm
- Density of points ≥ 30 points/cm²
- Scanning volume ≥ 380 (L) \times 180 (W) \times 130 (H) mm
- Weight limit ≥ 200 kg/person
- The use of physical landmarks producing an additional apparent volume is not allowed.
- Occlusions should be minimised. Ankle bones, foot dorsum and foot plant must be visible
- Noise should be removed/filtered from the 3D data (e.g. ground surface, walls, etc.)
- Must capture body surface with all skin tones and body art.
- Handheld scanners are not allowed.

Output file(s):

- Point cloud or mesh in OBJ, STL or PLY format, one file per scan
- In case of providing anatomical landmarks (see section **Fehler! Verweisquelle konnte nicht gefunden werden.**), TXT or CSV format including xyz coordinates (same coordinate system as the point-cloud/mesh) and landmark labels, one file per scan.
- Estimation of the ground plane (e.g. Z = 0). It can also be identified through 3 or more landmarks.
- All 3D scans and landmarks should be oriented regarding the same reference system, which must be identified (e.g. X-front, Z-up)

Body scanner



Acquisition:

- Scanning time ≤ 12 sec
- Accuracy ≤ 1 mm of average error in 110 cm cylinder girth (or similar accuracy tests with other cylinder sizes or spheres)
- Density of points ≥ 10 points/cm²
- Scanning volume ≥ 1000 (D) \times 1200 (W) \times 2100 (H) mm
- Weight limit ≥ 200 kg/person
- The use of physical landmarks producing an additional apparent volume is not recommended. In case of being used, there should be provided enough information (e.g. centre position and diameter of the semi-sphere) to remove them from the resulting surface.
- Occlusions should be minimised. Head, face, torso, arms, fists, legs and feet should be visible.
- Mesh reconstruction artefacts not representing body surface should be removed, for example, webbing in slit areas such as crotch or armpits. Alternatively, actual measured points should be identified as a subset of those included in the final mesh.
- Noise should be removed/filtered from the 3D data (e.g. ground surface, walls, etc.).
- Must capture body surface with all skin tones, body art.
- Handheld and turntable scanners are not allowed.

Output file(s):

- Point cloud or mesh in OBJ, STL or PLY format, one file per scan
- Anatomical landmarks (see section **Fehler! Verweisquelle konnte nicht gefunden werden.**) in TXT or CSV format including xyz coordinates (same coordinate system as the point-cloud/mesh) and landmark labels, one file per scan
- Estimation of the ground plane (e.g. Y = 0), the sitting surface plane and any additional stepping surface. They can also be identified through 3 or more landmarks.
- All 3D scans and landmarks should be oriented regarding the same reference system, which must be identified (e.g. Y-up, Z-front)

VII.4 Additional accessories

Apart from the instruments described before, other accessories are needed to carry out the measurement process correctly. There are two types of accessories: those that are commercially available and can therefore be purchased, and those that are partially or completely manufactured because its functions are very specific for the task.

1. **Adjustable stool.** Measurements in sitting posture require a stool that can be adjusted to the whole range of popliteal height of the population. Due to the extensive age range of this project, the range of adjustment of the stool is expected to be very large. Therefore, a set of platforms can be used to elevate feet of the smaller children to the required supporting plane, so as the foot is completely straight and in contact with this surface.
2. **Measuring rod.** EN ISO 7250-1 describes the characteristics of the measuring rod that is required for some reach measurements.
3. **Dermographic pencil.** It is used to mark the anatomical points before taking the measurements.
4. **Physical markers.** The requirement for physical markers and its features depend on the requirements of the scanning device.
5. **Scanning/measuring attire.** In order to avoid bias of the measurements due to clothing, the actual shape of the body should not be distorted by garments. Children must be measured wearing underwear, or in the case of babies wearing nappies, they should be measured naked. ISO 20685-1 provides the general requirements for the adequate attire of the subject during the scanning process, which are also suitable for the measuring process with traditional instruments. Apart from those requirements, the specific characteristics of the garment will depend on the scanning technology that will be used in the campaign.
6. **Head cap.** Whenever the head is involved in a measurement or the hair could occlude some relevant part of the body for a measurement, a head cap is required as part of the attire of the participant. Caps are recommended to be tight enough to contain abundant hair but soft enough to be comfortable for the children.
7. **Measuring block.** Blocks are used as a supporting or reference surface for the anthropometer in some traditional measurements. Eventually, this surface has to be a wall, therefore the approachability to a clear wall has to be ensured when setting up the measuring room.
8. **Measuring table for babies.** As indicated in the protocol for babies between 0 and 1 year of age, measurements should be taken in the supine position. Therefore, a smooth, rigid surface where the baby can lie down is required. For the comfort of the technicians, this table should be adjustable. The size of the surface must be enough to ensure, not only good performance of the measuring process, but also to prevent babies from falling off it.
9. **Devices to preserve the optimum position of the subject during the scanning process.** Due to the high influence of the posture in the measurements obtained from scan data, any physical or digital device that would help to arrange the posture of the subject can be used for this purpose.

VIII Scanning postures and conditions

VIII.1 Head

To acquire the acceptable scan data of the head in order to obtain the relevant anthropometric measurements, the following requirements must be satisfied:

- The head should be positioned in the Frankfurt plane
- The subject must not wear anything on the face or head that could interfere with the measurements or distort the actual body shape.
- A head cap will be placed with the intention of collecting and flattening the hair.

In the case of subjects with long hair (long hair is considered when it cannot be fully collected inside the head cap without distorting the actual head shape) hair should be worn as shown in figure 1 b.



Figure 1: Head cap position for subjects with short hair (left). Head cap's position for subjects with long hair. (right)

The set of physical markers that are needed to identify landmarks of the body will depend on the scanning technology, the same as with the features of the markers.

The scanner acquisition must be reviewed to detect any failure that invalidates the data for its proper use and the scan should be repeated until the correct data is registered.

VIII.2 Hand

The right hand is scanned with the hand scanner in two postures, and afterwards, the images are processed to obtain the measurements.

- Posture 1: Fingers 2 to 5 are in contact and thumb is separated.
- Posture 2: All the fingers are separated between them.



Figure 2. Posture 1 for hand scanning

Figure 3. Posture 2 for hand scanning

VIII.3 Foot

Some aspects regarding the subjects' conditions and postures must be considered:

- No socks or stockings
- Subjects' trousers are pulled up to mid-leg.
- Depending on the technology, it can be necessary to add some physical or visible marks in several landmarks of the foot.
- Posture: subjects must stand with weight equally distributed in both feet.
- Preferably, the longitudinal axis of the foot must be aligned with one axis of the scanning volume. This axis must be reported with the data.

VIII.4 Body

The following body scanning protocol will apply for the age groups from 4 to 16 years old in all the postures that are described hereafter.

To obtain adequate scan data the following aspects must be checked before the scanning session:

- The clothing worn by the subject during the scan must be minimal. The most appropriate attire is underwear or swimwear that neither alters actual body shape nor hides any crucial landmark or relevant part of the body. Therefore, flesh compression, bagginess and folds must be avoided. Colour and texture depend on the scanning technology.
- Scans must be done without shoes, socks or tights.
- The hair must be covered with a head cap and the neck must remain totally visible to the cameras. In subjects with long hair, it must be collected in the back part of the head to maintain the actual position of the vertex. (See Figure 4).



Figure 4: Head cap position for subjects with short hair (left). Head cap's position for subjects with long hair. (right)

The proposal of scanning postures is based on positions described in ISO 20685-1:2018. Additional aspects have been considered for the proposal based on the experience of the pilot study:

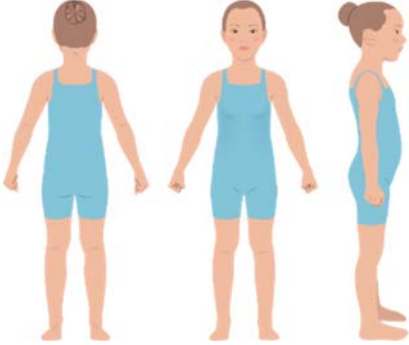
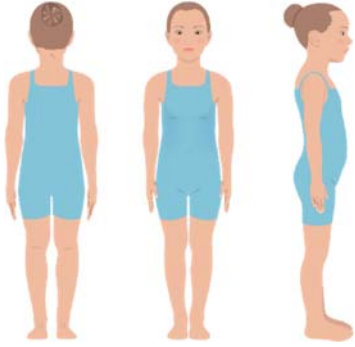
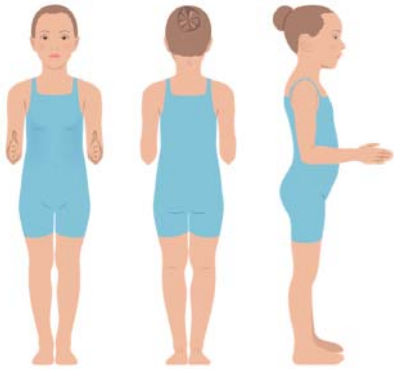
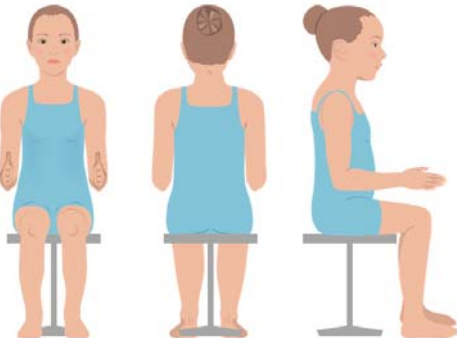
- The use of symmetric postures avoid undesirable torsion or tilt of the torso.

- Postures of the fingers (closed fist or extended fingers) will depend on the related measurements and post-processing requirements.

The proposal of postures for body scanning is described in Table 16. In all four postures, breathing by the subject should be quite and normal and muscles of the body should not be tense.

Initially, children from 1 to 3 years old only have to be scanned in position A-Pose and B-Erect to calculate most of the anthropometric measurements.

Table 16 – Body scanning postures

IMAGE	DESCRIPTION OF THE POSTURE
<p style="text-align: center;"><i>A-POSE</i></p> 	<p>Subject stands erect with the head oriented in the Frankfurt plane.</p> <p>Feet are placed hip width apart.</p> <p>Upper arms are abducted to form a 20° angle with the sides of the torso.</p> <p>Elbows are straight.</p> <p>Fists are closed with the dorsum facing laterally.</p> <p>Weight is equally distributed in both feet.</p>
<p style="text-align: center;"><i>B-ERECT</i></p> 	<p>Subject stands erect with the head oriented in the Frankfurt plane.</p> <p>Heels are together, or as close as possible when upper legs come together before the heels are in contact.</p> <p>Upper arms hang relaxed at the sides of the body and the elbows are straight.</p> <p>Palms are facing the body.</p> <p>Weight is equally distributed in both feet.</p>
<p style="text-align: center;"><i>C-FUNCTIONAL</i></p> 	<p>Subject stands erect with the head oriented in the Frankfurt plane.</p> <p>Heels are together, or as close as possible when upper legs come together before the heels are in contact.</p> <p>Arms are bent 90° at the elbow with the palm facing medially.</p> <p>Weight is equally distributed in both feet.</p>
<p style="text-align: center;"><i>D-SITTING</i></p> 	<p>Subject sits erect with the head oriented in the Frankfurt plane.</p> <p>Upper arms hang down at the side.</p> <p>Arms are bent 90° at the elbow with the palm facing medially.</p> <p>Thighs are parallel to each other and there is a 90° angle between the Thigh and torso.</p> <p>Feet are supported on the ground so that the femora are horizontal and parallel to each other.</p>

Annex 2

Content of an invoice – 2016-03-14 – EC DG GROW

Supplier information

Compulsory information for an invoice for all or majority of member states	Compulsory information for an invoice for certain member states only
Full name of the supplier	
Full address of the supplier	
The VAT identification number of the supplier in accordance with ISO Standard under which he supplied the goods and services (for all member states except Bulgaria)	For Bulgaria, Cyprus, Germany, Greece, Romania, Slovakia: Tax reference number of the supplier , in other cases, where your country refrains from allocating a VAT identification number in accordance with ISO Standard for certain cases
	For Belgium, Cyprus, Denmark, Estonia, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Netherlands, Poland Portugal, Romania, Slovenia: <ul style="list-style-type: none"> • Full name of tax representative (if any) of the supplier where the person liable to pay VAT is the tax representative, • Full address of the tax representative (if any) of the supplier where the person liable to pay VAT is the tax representative, • VAT identification number of the fiscal representative in accordance with ISO Standard (if any) of the supplier where the person liable to pay the VAT is the tax representative.

Customer information

Compulsory information for an invoice for all or majority of member states	Compulsory information for an invoice for certain member states only
Full name of the customer	
Full address of the customer	
The VAT identification number of the customer in accordance with ISO Standard where the customer is liable to pay the VAT or in case of intra-Community supplies (except for Bulgaria)	For Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Germany, Greece, Latvia, Lithuania, Malta, Poland, Portugal, Romania, Slovak Republic, Spain: The VAT identification number of the customer in other cases than general rule.
	For Belgium, Cyprus, Estonia, Greece, Hungary, Italy, Latvia, Lithuania, Netherlands, Poland, Portugal, Romania, Slovenia: <ul style="list-style-type: none"> • Full name of the tax representative (if any) of the customer where the person liable to pay VAT is the tax representative • Full address of the tax representative (if any) of the customer where the person liable to pay VAT is the tax representative • VAT identification number of the fiscal representative (if any) the customer where the person liable to pay the VAT is the tax representative

Content information

Compulsory information for an invoice for all or majority of member states	Compulsory information for an invoice for certain member states only
<ul style="list-style-type: none"> • Sequential number based on one or more series, which uniquely identifies the invoice • Date of issue of the invoice • Date on which the supply of goods or services was made or completed or the date on which the payment on account was made before any supply, insofar as that a date can be determined and differs from the date of issue of the invoice (except for Bulgaria) • Description/nature of the goods or services • Quantity of the goods supplied or the extent and nature of the services rendered • Price per unit (excluding VAT) (except for Germany) • Any discounts or rebates, not included in the unit price (except for Austria) • Taxable amount per VAT rate or exemption • VAT rate(s) applied • Total VAT amount 	<p>Where an exemption is involved or where the customer is liable to pay the tax further information should be given accordingly :</p> <ul style="list-style-type: none"> • Reference to the appropriate provision of the Sixth directive for: Austria, Belgium, Cyprus, Denmark, Estonia, Finland, France Germany, Ireland Lithuania Luxembourg, Netherlands, Poland, Portugal, Sweden, Spain, UK <p>OR</p> <ul style="list-style-type: none"> • Reference to the corresponding national provision for: Czech Republic, Greece, Hungary, Italy, Latvia, Malta, Slovak Republic, Slovenia, Austria, Belgium, Cyprus, Denmark, Estonia, Finland, France Germany, Ireland Lithuania Luxembourg, Netherlands, Poland, Portugal, Sweden, Spain, UK <p>OR</p> <ul style="list-style-type: none"> • Any indication that the supply is exempt or subject to the reverse charge procedure for: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Finland, France Germany, Greece, Hungary, Ireland, Luxembourg, Malta, Portugal, Romania, Netherlands, Poland, Sweden, Spain, UK
	<p>For Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France Greece, Hungary, Ireland, Italy, Malta, Netherlands, Latvia, Lithuania, Luxembourg, Poland, Portugal, Romania, Slovak Republic, Slovenia, Sweden, Spain, UK:</p> <p>Obligation to mention the amounts on the invoice in the local currency</p>
	<p>For Bulgaria, Greece, Hungary, Lithuania, Poland, Romania, UK:</p> <p>Obligation to issue the invoice in one of the official languages</p>

WARNING: *the issuer of the invoice should follow the VAT legislation in force at the time the invoice is issued*

Annex 3

Example/Draft for DATA PROCESSING AGREEMENT (DPA)

ON THE ONE hand: DIN Deutsches Institut für Normung e.V. with NIF DE 136 622 143 with domicile in Berlin/Germany registered in association register of Charlottenburg district court at No. VR 288 B represented by Management Board Members Christoph Winterhalter and Daniel Schmidt, each one with sole power of representation.
Hereinafter DATA CONTROLLER.

AND OTHERWISE: [Details of Contractor] Hereinafter DATA PROCESSOR

The parties recognize each other, in the nature in which they intervene, full capacity to contract and in the case of representing third parties, each of the parties ensures that the power with which it acts has not been revoked or limited, and that it is enough to compel their constituencies under this data access contract, and to that end:

EXPOSE

I- That DATA CONTROLLER, DIN - the German Institut for Standardisation, acting on behalf of the European Committee for Standardization (CEN), which is a business facilitator in Europe, removing trade barriers for European industry and consumers. The mission of CEN as well as the national standardization organisations in Europe is to foster the European economy in global trading, the welfare of European citizens and the environment. Through its services it provides a platform for the development of European Standards and other technical specifications.

That within the framework of the development of its activities it has signed with DATA PROCESSOR a contract for the provision of services "Anthropometric data of children in Europe" (Proposal for Anthropometric Survey Participant" submitted on 2021-MM-DD) (hereinafter "Contract"). Call for Tender launched on 2021-07-DD.

II.- That DATA PROCESSOR is an entity that, through the contract described in the previous section, provides services to DATA CONTROLLER that require or may require data processing on behalf of the DATA CONTROLLER.

III.- That the RESPONSIBLE has decided to choose this MANAGER because the latter offers sufficient guarantees to apply appropriate technical and organizational measures to the data provided, guaranteeing that the treatment ordered complies with Regulation (EU) 2016/679, on Data Protection (RGPD) and regulations that develop it, and guarantees the protection of the rights of the interested parties, according to the following

CLAUSES AND CONDITIONS

FIRST.- Purpose of the treatment order contract

The purpose of this contract is to enable DATA PROCESSOR to process, on behalf of DATA CONTROLLER, the personal data necessary for the provision of the service in accordance with the provisions of the Contract, to which this treatment contract is attached. forming an inseparable part of it.

In accordance with the foregoing, to carry out the provision of the service, the DATA PROCESSOR will carry out different data processing operations in accordance with the provisions of article 4.2 of the RGPD, either by automated procedures or not.

SECOND.- Identification of the affected information

For the execution of the benefits derived from the fulfillment of the object of this order, DATA CONTROLLER makes available to the DATA PROCESSOR, the information described below:

Nature and purpose of the treatment:

The nature and purpose of the treatment is:

- Carry out activities by [name of contractor] related to data management, which are contained in the main contract on which this annex depends, and can be summarized as follows:
- Anthropometric campaign in [country of the survey]: [name of contractor] will carry out the anthropometric measurement campaign for children in [country of the survey], including measurements of the head, full body, hands and feet. Body measurements will be collected at different points and uploaded / sent to [name of contractor] for corresponding processing and analysis.

Stakeholders:

- The categories of interested parties from which data will be processed are:
Underage voluntary users and authorizing parents with parental authority

Type of personal data:

- The types of personal data that will be processed will be:

Identification data of minors and authorizing parent. Any type of anthropometric data as a result of the complete scan of the subject, both on physical and digital media.

THIRD.- Duration and conservation

This contract will be maintained as long as there is a service contract in force. Once the present contract object of the tender service ends, following the instructions that DATA CONTROLLER indicates, the DATA PROCESSOR must delete and / or return DATA CONTROLLER all personal data and delete any copy that is in its possession. The DATA PROCESSOR will keep all the informed consents of the data processing of the participants, and each informed consent will be

translated by [name of contractor] into the mother tongue of the people participating in the project. Consent will be obtained before data collection.

The DATA PROCESSOR will anonymize the personal data once they are collected, keeping them anonymous for R + D + I.

However, and whatever the option selected by the DATA CONTROLLER, the DATA PROCESSOR may keep a copy, with the personal data duly blocked, while responsibilities may arise from the execution of the service.

QUARTER. DATA PROCESSOR obligations

DATA PROCESSOR and all its personnel undertake to:

a. Use the personal data object of treatment, only for the purpose object of this order. In no case may the personal data be used for other or own purposes.

b. Process the data in accordance with DATA CONTROLLER's written instructions.

If the DATA PROCESSOR considers that any of the instructions violates the GDPR or any other data protection provision of the Union or of the Member States, the person in charge will immediately inform the DATA CONTROLLER.

c. When appropriate, in accordance with the provisions of article 30.2 of the RGPD, keep, in writing, a record of the treatment activities carried out on behalf of the controller, containing:

- The name and contact details of the processor or processors and of each controller on behalf of which the processor is acting, and, where applicable, of the controller's or the processor's representative, and the data protection officer;
- The categories of processing carried out on behalf of each controller;
- Where applicable, transfers of personal data to a third country or an international organisation, including the identification of that third country or international organisation and, in the case of transfers referred to in the second subparagraph of Article 49(1) GDPR, the documentation of suitable safeguards;
- When possible, a general description of the technical and organizational security measures referred to in article 30 section 1 of the GDPR.

d. Do not communicate the data to third parties, unless you have the express authorization of the data controller, in legally admissible cases.

The DATA PROCESSOR may communicate the data to other data processors linked or contracted by the DATA CONTROLLER, in accordance with the DATA CONTROLLER's instructions. In this case, the DATA CONTROLLER will identify, in advance and in writing, the entity to which the data must be communicated, the data to be communicated and the security measures to apply to proceed with the communication.

If the DATA PROCESSOR must transfer personal data to a third country or to an international organization, under the law of the Union or of the Member States that is applicable, it will inform DATA CONTROLLER of that legal requirement in advance, except that such Law prohibit it for important reasons of public interest.

e. Subcontracting: In case the DATA PROCESSOR decides to subcontract all or part of this service, it must have prior written authorization from the DATA CONTROLLER. Once the subcontracting is authorized, the SUB-MANAGER of the treatment must be subject to the same conditions and to the same written form that the MANAGER maintains with the RESPONSIBLE, the MANAGER responding to the RESPONSIBLE in case of non-compliance by the SUB-MANAGER, having to enter into a written contract between the MANAGER and SUB-MANAGER.

f. Maintain the duty of secrecy regarding the personal data to which you have had access under this order, even after the end of its purpose.

g. Guarantee that the persons authorized to process personal data commit themselves, expressly and in writing, to respect confidentiality and comply with the corresponding security measures, which must be properly informed, guaranteeing appropriate training, where appropriate.

h. Maintain at the DATA CONTROLLER's documentation supporting the fulfillment of the obligation established in the previous section.

i. Assist the DATA CONTROLLER in the response to the exercise of the rights of access, rectification, suppression, opposition, limitation of the treatment, portability of data and not to be subject to automated individualized decisions (including the elaboration of profiles).

[name of contractor] will assume for this project the management of all the exercises of the rights of the affected people through the email address [e-mail address to be defined], giving attention, response and conservation. In the same way, it will provide the contact details of the Data Protection Officer [corresponding e-mail address].

j. Notification of data security breaches

In the event of a security breach, which is likely to constitute a risk to the rights and freedoms of individuals, the DATA PROCESSOR will notify the DATA CONTROLLER, without undue delay, and in any case before the maximum period of FORTY-EIGHT HOURS, and through a communication through the email address provided for these purposes by the RESPONSIBLE, violations of the security of personal data in his charge of which he has knowledge, together with all the relevant information for the documentation and communication of the incident .

If it is available, the DATA CONTROLLER will be provided with at least the following information:

a) Description of the nature of the breach of personal data security, including, where possible, the categories and approximate number of data subjects affected, and the categories and approximate number of personal data records affected.

b) The name and contact details of the data protection officer or other point of contact where further information can be obtained.

c) Description of the possible consequences of the violation of the security of personal data.

d) Description of the measures adopted or proposed to remedy the violation of the security of personal data, including, if appropriate, the measures adopted to mitigate the possible negative effects.

If it is not possible to provide the information simultaneously, and to the extent that it is not, the information will be provided gradually without undue delay.

k. Make available to the DATA CONTROLLER all the information necessary to demonstrate compliance with its obligations, as well as to carry out the audits or inspections carried out by the DATA CONTROLLER or another auditor authorized by it, helping the controller to fulfill its obligations regarding the GDPR.

l. The DATA PROCESSOR will guarantee the security measures that are attached to this contract as ANNEX I, which have been adopted in compliance with article 32 of the RGPD, based on risk, taking into account the state of the art, application costs, and the nature, scope, context and purposes of the treatment, as well as risks of variable probability and seriousness for the rights and freedoms of the natural persons that the data treatment presents, as a consequence of the destruction, loss or accidental alteration or illegal personal data transmitted, preserved or otherwise processed, or unauthorized communication or access to such data.

The effectiveness of these measures will be verified, evaluated and audited on a regular basis by DATA PROCESSOR.

Notwithstanding the foregoing, DATA CONTROLLER will be responsible for guaranteeing security measures at the local level in relation to its systems, users and physical and logical environments.

m. Communicate the contact data for data protection aspects to the DATA CONTROLLER.

FIFTH. DATA CONTROLLER obligations

Corresponds to the DATA CONTROLLER:

a) Assume all the measures and obligations established for the data controller in the RGPD, vis-à-vis the interested parties and vis-à-vis the Control Authority, without prejudice to the collaboration commitments assumed by DATA PROCESSOR in this contract, which do not represent a delegation or substitution or resignation by the RESPONSIBLE.

b) Determine the categories of people, types of data and purposes and means of data processing, all of which will be made available to DATA PROCESSOR under the appropriate processing instructions.

c) Carry out an evaluation of the impact on the protection of personal data of the processing operations to be carried out by the DATA PROCESSOR, where appropriate.

d) Make the appropriate prior consultations, if applicable.

e) Ensure, prior to and throughout the treatment, compliance with the RGPD by the DATA PROCESSOR.

f) Supervise the treatment, including carrying out inspections and audits.

g) Guarantee the confidentiality of data in relation to its personnel as well as security measures at the local level in relation to its systems, users and physical and logical environments.

h) Guarantee that the data has been lawfully provided to the DATA PROCESSOR, that the DATA CONTROLLER has a legal basis for such treatment, and that it has guaranteed the rights established in Article 13 of the RGPD.

SIXTH.- General

Legal regime: This contract shall be governed firstly by the stipulations contained therein and in what is not provided for therein by the provisions of common, civil or commercial law that are applicable to it.

Previous agreements and contracts: This contract constitutes the agreement between the Parties in relation to its object and leaves without effect any other negotiation, obligation, contract or communication of any nature between them, on the same object, either verbally or in writing, carried out prior to the date on which it is signed, thus leaving the same / s, in its case, without effect.

Modifications: This contract may not be modified except by written agreement after its date, signed by representatives authorized by both Parties. When applicable, the alternative or additional provisions to this contract that the Parties have accepted in writing shall be considered part of the contract from the moment they are signed and incorporated into it as annexes.

Assignment: DATA PROCESSOR may not assign or transmit this contract to any third party without the prior written consent of DATA CONTROLLER.

Resignation: The non-claim by any of the Parties, at any time, of compliance with any of the provisions of this contract, may not be construed in any way as a waiver of the content of said provisions, nor may it affect the validity of this contract or any part thereof, or the rights of the counterparty to claim compliance with any provisions thereof.

Nullity: If any obligation of this contract is invalid by virtue of any applicable legal norm, said stipulation will not be applicable where the legal norm that determines its invalidity is, and this invalidity will not affect the remaining stipulations of the contract that will continue to enjoy full effectiveness, for which purpose all of them are declared independent. Notwithstanding the foregoing, said invalid stipulation will be interpreted and complied with (to the fullest extent permitted by applicable law) in accordance with the original intention of the Parties as expressed in the contract.

Interpretation: The titles of this contract have been included for reasons of convenience and reference and will not affect the interpretation of the clauses of this contract, which will be governed by their own terms.

Jurisdiction: For the exercise of the actions that may derive from this contract, the contractors expressly submit to the jurisdiction and jurisdiction of [...], expressly waiving any other jurisdiction that may correspond to it.

Basic and detailed information on personal data protection addressed to the signatories and interlocutors of this contract: The entity [details of Contractor] is data controller of the personal

data of the legal representatives and interlocutors of the parties (hereinafter the interested parties) collected in this contract and those who are generated as a consequence of their execution.

Contact information for aspects related to Data Protection: The electronic contact address of the data protection officer is [e-mail address].

Need for treatment: The communication of personal data by the interested parties constitutes a necessary contractual requirement for the execution of this contract, and the interested parties must provide and be informed from this moment that the consequences of not providing such data may be the impossibility of signing this contract, its impossible execution and even its resolution.

Purposes of treatment: The purposes of data processing are (i) to carry out the management, development, compliance and control of the contractual relationship; (ii) inclusion of data in [name of Contractor]'s corporate, departmental and employee contact agendas that require it; (iii) and the management of the contractual file including its file.

Data retention period: The personal data of the interested parties will be kept by [name of Contractor] throughout the execution of this contract and at the end of this contract, during the periods indicated in the civil and commercial regulations by which possible actions can be brought to demand liability arising from the contractual relationship.

Legal basis of the treatment: The processing of data of the interested parties by [name of Contractor] is necessary for the execution of the contract in which the interested parties are party in their capacity as legal representatives and / or interlocutors thereof.

Recipients of the data: Personal data will also be processed on a legal basis in compliance with [name of Contractor]'s legal obligations for communication to the following third parties, where applicable: (i) Administrative authorities of any nature, as well as courts and tribunals; (ii) financial auditors for the fulfillment of financial obligations.

International data transfers: The data will not be transferred internationally.

Data processor: Third party companies external to [name of Contractor] (data processor), will have access to the data of the Interested Party in order to provide auxiliary services to [name of Contractor] that suppose necessary support functions for the activity and main treatments indicated in the section "purposes of treatment "Of this clause, or the [name of Contractor] business. The data will be made available to said data processor under a service provision contract and a treatment contract with the obligation to follow [name of Contractor]'s treatment instructions, keep confidentiality, return and / or destroy the data to the termination of the service, the processing of the data for the purposes of the data processors being prohibited.

Rights: Interested parties can exercise their rights of access, rectification, cancellation or deletion and opposition, limitation of treatment and, where legally applicable, portability of their personal data by sending a written request to [name of Contractor] the following postal address [address of Contractor] and / or electronic [relevant e-mail of Contractor], providing a copy of your DNI / NIF or valid document in Law to prove your identity.

Contact details of the national Data Protection Agency: In any case, the interested parties are

informed of the right to submit a claim to a control authority (in [country of the survey] the [name of national Data Protection Agency], in particular, when they consider that they have not obtained satisfaction in the Exercise of their rights. Those interested can contact the [name of national Data Protection Agency] through [website of national Data Protection Agency] or at the following address [name of national Data Protection Agency], and / or contact telephone number [telephone number of national Data Protection Agency].

And in proof of conformity, the parties sign a duplicate copy of this contract, at the place and date mentioned in the heading.

By [name of contractor]

By DIN e.V.

[Name, position]

Christoph Winterhalter
Chairman of the Executive Board
(Stamp)

(Stamp)

(Date)

(Date)

i. V. Reiner Hager
Head of Group "Sustainability and
Management Systems"

(Date)

ANNEX I

INVENTORY OF SECURITY MEASURES ((following to be replaced by description of security measures of the contractor))

In accordance with the provisions of clause FOUR, section I) of the Treatment Order Contract to which this Annex is attached, the DATA PROCESSOR undertakes to comply with the following security measures in relation to the treatments under the responsibility of the DATA CONTROLLER:

Those indicated in the SECURITY MEASURES section of the document Registration of treatment activities (Data processor):

SECURITY OF INFORMATION SYSTEMS

1. Security and risk management policy.
 1. The [name of contractor] management has formalized and approved a security and risk management policy and the regulations regarding security and use of information systems (use of user identifiers and passwords; of computer equipment; programs and content storage; mobile devices; e-mail; internet; personal data; on the confidentiality of information and duty of secrecy), which have been communicated to all staff and have been approved by the staff representatives.
 2. Users are periodically trained to learn about or update their information systems security policy.
 3. The critical risks of the information systems have been identified and adequate controls have been implemented to mitigate them.
 4. There is an inventory and classification of information resources based on their significance and level of sensitivity; defining, therefore, the security requirements.
2. Protection of information systems
 1. Access to information systems are registered and requires the identification and authentication of users in an unequivocal and personalized way.
 2. Passwords are renewed within a period not exceeding one year.
 3. The access authorizations depend on the position, position and functions of the user.
 4. User registration and cancellation procedure. Unused (obsolete) accounts are locked out for a preset period after which they are removed.
 5. Guaranteed configurations have been defined for workstations, laptops, servers, and mobile devices.
 6. Centralized management procedures and monitoring of computer system configurations have been implemented.
 7. Laptops are protected with personal firewalls.
 8. An antivirus program has been installed on all systems and updates are monitored for antivirus.
 9. Regular use of security patches is made.

10. A disaster recovery plan has been implemented and tested.
11. Daily data backups are made; They are tested periodically and a backup is usually placed in a remote location.

3. Network security and operations

1. Communications cabling centers have restricted access. The mains sockets are correctly identified and labeled.
2. The traffic filtering (firewalls) between the internal network and the Internet is updated and a periodic check is made of the incoming and outgoing traffic.
3. The intrusion detection / prevention system is regularly implemented, updated and monitored.
4. Internal users have access to Internet web pages when browsing through a network device (proxy) equipped with web antivirus and web page filtering.
5. Network segmentation has been implemented to separate critical areas (servers, administration, etc.) from less critical areas.
6. Procedures for incident management and change management have been implemented
7. Security events (virus detection, access attempts, etc.) are periodically recorded and monitored.
8. A proactive monitoring system for possible intrusions has been implemented; priority is given and security events and alerts are processed accordingly.
9. Remote access. The level of security in access to data through communication networks is equivalent to that corresponding to access in local mode.

4. Physical security of the computer room

1. Critical systems are located in a computer room -data center- specially designed for this purpose, with restricted access, and properly acclimatized to their function.
2. The data center that houses the critical systems has a robust and monitored infrastructure (redundant capacity of the power supply, air conditioning, network connections, etc.).
3. The data center that houses the critical systems is protected against unauthorized access.
4. Critical data is duplicated in two separate locations.
5. An automatic fire detection and extinction system has been implemented in critical areas.
6. The power supply is protected by an uninterruptible power supply and batteries (maintenance of both is periodic).
7. The support to the energy supply is through an electric generator that is maintained and tested regularly.

5. Physical security and workplace environment

1. The [name of contractor] building has restricted and controlled access areas through the issuance of authorizations that allow identification for access to physical locations. Visits and external personnel are provided with an identification (identification card) that is necessary to stay in the center, in addition to always being accompanied by [name of contractor] personnel.

2. The workstations are configured so that the user session is blocked in the event of inactivity.
3. All fire doors in the [name of contractor] building have an alarm and automatic closing.

PERSONAL DATA WORKING IN POWER OF [name of contractor]

6. Policy for the protection of personal information

1. The [name of contractor] management has formalized and approved a data protection policy and the security regulations that affect personal data have been defined, and they have been communicated to the corresponding personnel.
2. The legal aspects of this policy have been validated by the legal service, which performs a periodic check in order to verify compliance with the legislation and regulations on the protection of personal data.
3. Training sessions are provided to sensitize authorized personnel to access or process personal data.
4. Relevant staff have signed a confidentiality agreement or a confidentiality clause in their employment contract.

7. Collection of personal data

1. The data protection policy has been published on the website and it has been reviewed by an attorney / legal department.
2. You have obtained the consent of people before collecting your personal data and such people can access and, if necessary, correct or delete your personal data.
3. In the case of marketing operations, interested persons can easily exclude themselves.

8. Controls for the protection of personal information.

1. Access to personal data is limited to those users who require access to said information in order to fulfill their functions, and access authorizations are reviewed regularly.
2. Personal data and backup copies of personal information undergo an encryption process when stored in information systems.
3. Personal data undergoes an encryption process when transmitted over the network.
4. Neither copying to removable storage nor e-mail transmission of non-encrypted personal data is allowed.