Open Call for Tender

for the project

“Anthropometric considerations for machinery/PPE” (AnthropoMachPPE)

to select

one Technical Project Leadership and

one Researcher on Anthropometry applied to Human-Machinery/PPE Interaction and

one Anthropometric Pilot Study Participant

Starting date: *2026-05-22*

Deadline for tenders: *2026-06-30*
Tender validity period: *2026-12-30*

I Introduction

From the outset, equality and diversity have been identified as important topics in President von der Leyen’s mandates. The ‘Union of Equality’ was one of the themes in the political guidelines for the Commission 2019-2024 as well as of the Commission 2024-2029. The modernisation of European harmonised standards to safeguard every European’s interest equally well, in particular regarding safety, contributes to this effort. In this case, equality is expressed by standards fairly taking into account the diversity of Europeans’ bodies.

The AUWP 2025 includes items on anthropometric studies in support of safety in machinery (Action 68) and in support of safety of personal protection equipment (Action 69). Their main objective is to drive along the process to adapt machinery and personal protection equipment (PPE) to fit the morphology of the largest possible share of EU users using effective and efficient means. The development of such standards, which would also implement the UNECE Declaration on gender-responsive standards, would make product safety fairer.

Up-to date and representative anthropometric data are essential for drafting standards inclusive and gender responsive ensuring an adequate level of safety for the whole European population. This is particularly true for harmonized standards on machinery or PPE. There are currently about 150 standards harmonized under the PPE regulation (EU) 2016/425 and 800 standards harmonized under the machinery directive 2006/42/EC. In the context of the new machinery Regulation (EU) 2023/1230 many of these standards are being/have to be revised. But also, many other (safety) standards would benefit from up-to-date anthropometric data.

Anthropometric data are needed to specify appropriate (safety) requirements such as probes, openings, loads, accessibility etc. in order to avoid/reduce risks. The use of incorrect or out-of-date data may result in the (safety) requirements not covering all users of products (or environments etc.) to whom they are destined.

A comprehensive, statistically representative and up-to-date set of anthropometric data of the entire EU’s population is currently not available, limiting the development of (harmonised) standards for machinery and PPE. Compiling a comprehensive dataset that is statistically representative across the EU would require several tens of thousands of Europeans to be measured as well as continued efforts to keep the data up-to-date.

To address this data gap, CEN/TC 122 “Ergonomics” and in particular CEN/TC 122/WG 1 “Anthropometry” carried out the project “Making harmonised standards inclusive/gender-responsive” (ADULT ANTHR-DATA) funded by the European Commission and the European Free Trade Association. This feasibility study for a potential European survey to gather the required anthropometric data was completed by the end of October 2025 and provided various scenarios differing in terms of scope (e.g. age group, sector, comprehensiveness of measurement programme) and costs.

Due to the great variety of products and environments there is a broad range of anthropometric data needs. Addressing all possible data needs would result in a measurement protocol which could not be covered in a European anthropometric survey due to its complexity, duration and the resulting costs.

Consequently, it is important to optimize the measurement protocol in such a way that it addresses as many data needs as possible while still being practical for an anthropometric survey.

In order to ensure that the measurement protocol(s) resulting from the scenarios of ADULT ANTHR-DATA meet this requirement CEN/TC 122/WG 1 will conduct a project (AnthropoMachPPE) to validate the results and scenarios of ADULT ANTHR-DATA in case studies for machinery and PPE. In particular, it will confirm the anthropometric data needs for the machinery and PPE sectors and further develop, finalize and implement the measurement protocol and related processes (e.g. data flow protocol, recruiting).

The project (AnthropoMachPPE) will also include an extended anthropometric pilot study/survey. This will on the one hand confirm the practicability of the measurement protocol (e.g. comparing different measurement protocols suggested in different scenarios of ADULT ANTHR-DATA and confirming their duration) and allow testing the related processes. On the other hand, it will already generate a limited sample of anthropometric data. These data will not only serve as input for a potential European survey but can e.g. also be used to provide first statistical summaries. Furthermore, they will form the basis for confirming correlations between measures and can, consequently, be used to check approaches based on typology (e.g. correlations between anthropometric measures) which could contribute to a significant cost-reduction of a future European survey.

The selection of the following subcontractors who will carry out certain main tasks of project AnthropoMachPPE in consultation with CEN/TC 122/WG 1 is subject to this call for tender:

- Technical project leadership
- Researcher on Anthropometry applied to Human-Machinery/PPE Interaction
- Anthropometric Pilot Study Participant

II Objectives

The overall mid to long term goal is the integration of anthropometric dimensions of all groups of the population in standards (e.g. on PPE or machinery) which would lead to better health and products, and safer work, greater inclusiveness and gender-responsiveness etc. for the whole of society. The update of anthropometric data (body dimensions and human physical strengths) is a prerequisite for this integration.

The objectives of this specific project (AnthropoMachPPE) are

- Confirmation of anthropometric data (body dimensions and human physical strengths) needs for machinery & PPE sectors;
- Address anthropometric data needs via inclusion in the measurement protocol or via alternative approaches;
- Completion and implementation of measurement protocol for a survey on anthropometric data, including design and development of devices and methods to measure human physical strength;
- Testing measurement programme / protocol for anthropometric survey and related processes in an extended pilot study in two European countries;
- Generate additional anthropometric data (body dimensions and human physical strengths);
- Review and adapt scenarios for an anthropometric survey developed in the project ADULT ANTHR-DATA based on final measurement protocol and findings of the extended pilot study.

III Execution

III.1 General tasks and organisation of the project

The project consists of the following work packages:

Work package 1 (WP1): Confirmation of anthropometric data needs and measurement programme for machinery/PPE,

Work package 2 (WP2): Development and finalization of measurement protocol and related processes,

Work package 3 (WP3): Pilot study/survey.

DIN German Institute for Standardization (Deutsches Institut für Normung e.V.) holds the secretariats of CEN/TC 122 “Ergonomics” and CEN/TC 122/WG 1 “Anthropometry”. It will, therefore, be responsible for the overall management and coordination of the project including carrying out this call for tender and signing and managing the contracts with the subcontractors.

CEN/TC 122/WG 1 will also act as steering committee of the project and supervise and guide the subcontractors.

The *Researcher on Anthropometry applied to Human-Machinery/PPE Interaction* will be responsible for the main tasks of WP 1. They will develop and apply a systematic approach (e.g. based on typology of human-machinery/PPE interaction) to confirm the anthropometric data needs and measurement programme resulting from ADULT ANTHR-DATA (see Annex X) specifically for machinery and PPE. Experts from relevant CEN and CENELEC committees (e.g. via liaisons and/or the relevant coordination groups) as well as other relevant stakeholders will be involved, e.g. in particular in workshops to contribute to and confirm the results for machinery and PPE.

The *Researcher on Anthropometry applied to Human-Machinery/PPE Interaction* will in particular be responsible to plan and organize (in cooperation with CEN/TC 122/WG 1 and the working group secretariat) two workshops: one dedicated to machinery and another one dedicated to PPE. Potential venues for the workshops could be the CEN CENELEC management centre in Brussels, Belgium, DIN in Berlin, Germany or alternative venue(s) proposed by the *Researcher on Anthropometry applied to Human-Machinery/PPE Interaction*, e.g. with special relevance for machinery or PPE. A budget of 5.000 € (separate from the budget of the *Researcher on Anthropometry applied to Human-Machinery/PPE Interaction*) has been allocated for the workshop to cover e.g. travel costs for speakers, catering, conference materials/flyers etc.

The *Technical project leadership* will develop and finalize the measurement protocol (e.g. measurement devices, anatomical landmarks, standardization of measuring attire, postures, design and development of devices and methods to measure human physical strength, etc.) and related processes (data flow protocol compliant with GDPR, concept for recruiting) (WP 2). The final measurement protocol and related processes will take into account the findings of WP 1.

They will be tested in a pilot study/survey (WP 3) carried out in at least two European countries in order to ensure they are working properly. These pilot studies will be carried out by the *Technical project leadership* (anthropometric data including human physical strength in one country) and the *Anthropometric Pilot Study Participant* (anthropometric data without human physical strength in another country).

The *Technical project leadership* will also be responsible for processing the anthropometric data from both countries as well as to review and adapt the scenarios for an anthropometric survey developed in the project ADULT ANTHR-DATA based on final measurement protocol and findings of the extended pilot study.

DIN in consultation with the CEN/TC 122/WG 1 convenor will prepare the interim and final reports based on the progress and interim reports of the subcontractors and input from other experts. These reports will also be used to formally inform the European Commission about the progress and outcome of the project.

Relevant groups within CEN/TC 122 will be involved. In particular, CEN/TC 122/WG 4 “Biomechanics” (responsible e.g. for EN 1005 series on “Safety of machinery - Human physical performance”) will be consulted in the context of activities related to human physical strength. Also, other relevant CEN and CENELEC Technical Committees will be involved, whenever relevant. Cooperation with several Technical Committees (via formal liaison or informal information exchange) as well as with the relevant coordination groups has already been established.

CEN/TC 122/WG 1 is cooperating with the CEN-CLC Coordination Groups on PPE (COG PPE) and machinery (COG machinery) in order to ensure the most relevant machinery and PPE TCs are properly involved in the project. The intention is to involve TCs with general but especially also with rather specific data needs to make sure that the broad range of machinery/PPE are taken into account, in particular in the context of WP 1 and the related workshops.

III.2 General tasks of the *advertised positions*

III.2.1 *Researcher on Anthropometry applied to Human-Machinery/PPE Interaction*

The *Researcher on Anthropometry applied to Human-Machinery/PPE Interaction* will have the main responsibility for delivering work package 1 (Anthropometric data needs for machinery/PPE). Their tasks will in particular include:

- WP 1 Anthropometric data needs for machinery/PPE:

  T1.1 Development of a methodology to systematically identify the anthropometric data needs of the machinery sector (e.g. based on typology of human-machinery interaction representative for the various types of machines of the machinery sector).

The methodology should be as aligned as possible with the methodology applied to PPE (T1.2).

T1.2 Development of a methodology to systematically identify the anthropometric data needs of the PPE sector (e.g. based on typology of human-PPE interaction representative for the various types of PPE of the PPE sector).

The methodology should be as aligned as possible with the methodology applied to machinery (T1.1).

T1.3 Systematic identification of anthropometric data needs of the machinery sector by applying the corresponding methodology (see T1.1).

T1.4 Systematic identification of anthropometric data needs of the PPE sector by applying the corresponding methodology (see T1.2).

T1.5 Conducting a workshop with relevant CEN/TCs and stakeholders from the machinery sector in order to discuss and confirm the findings of the investigation on data needs.

T1.6 Conducting a workshop with relevant CEN/TCs and stakeholders from the PPE sector in order to discuss and confirm the findings of the investigation on data needs.

T1.7 Comparison of results on anthropometric data needs for machinery and PPE from this project with the anthropometric data needs and measurement programme resulting from ADULT ANTHR-DATA.

→ Report on anthropometric data needs of machinery and PPE sectors (Deliverable D.1.1)

T1.8 Support the *Technical project leadership* in developing and finalizing the measurement protocol for an anthropometric survey (T2.1) taking into account the anthropometric data needs of the PPE and machinery sectors (T1.7).

T1.9 In cooperation with the *Technical Project Leadership*, develop alternative approaches for addressing specific anthropometric data needs which were not included in the measurement protocol (e.g. estimation based on correlations or, if very specific needs cannot be efficiently covered, suggesting separate, supplementary studies).

→ Report on alternative approaches for specific data needs (Deliverable D1.2)

- Interim and final reports, including the deliverables related to WP 1.

III.2.2 *Technical Project Leadership*

The *Technical Project Leadership* will have the main responsibility for delivering work packages 2 (Measurement protocol and related processes) and 3 (Pilot study/survey) and will contribute to work package 1 (Anthropometric data needs for machinery/PPE). Their tasks will in particular include

- WP1 Anthropometric data needs for machinery/PPE:

T1.5 Participation at a workshop with relevant CEN/TCs and stakeholders from the machinery sector (organized by *Researcher on anthropometry applied to human-machinery/PPE interaction*) in order to discuss and confirm the findings of the investigation on data needs.

T1.6 Participation at a workshop with relevant CEN/TCs and stakeholders from the PPE sector (organized by *Researcher on anthropometry applied to human-machinery/PPE interaction*) in order to discuss and confirm the findings of the investigation on data needs.

T1.9 In cooperation with the *Researcher on anthropometry applied to human-machinery/PPE interaction*, develop alternative approaches for addressing specific anthropometric data needs which were not included in the measurement protocol (e.g. estimation based on correlations or, if very specific needs cannot be efficiently covered suggesting separate, supplementary studies).

- WP2 Measurement protocol and related processes

T2.1 Develop and finalize measurement protocol for a survey on anthropometric data (including e.g. measurement devices, anatomical landmarks, standardization of measuring attire, postures) based on the results of ADULT ANTHR-DATA (see Annex X for information from this project) and taking into account the specific anthropometric data needs for machinery and PPE resulting from WP 1 (Report on anthropometric data needs of machinery and PPE sectors provided by *Researcher on Anthropometry applied to Human-Machinery/PPE Interaction* (Deliverable D.1.1)).

All data needs (see WP 1) should be addressed either by inclusion of corresponding anthropometric measures in the measurement programme or – if this is not feasible – by alternative approaches (D1.2).

→ Measurement protocol (including specification of devices and method description for human physcial strength) (Deliverable D2.1)

T2.2 Design and develop devices and methods to measure human physical strength.

T2.3 Set up, test and optimize anthropometric measurement protocol.

T2.4 Develop data flow protocol compliant with the General Data Protection Regulation (GDPR) and set up data processing pipeline.

→ Data flow protocol (Deliverable D2.2)

T2.5 Develop a concept for recruiting volunteers to participate in the anthropometric survey (i.e. to be measured).

Develop a questionnaire for the survey with questions addressed to the survey participants (see Annex X.2 for related information from project ADULT ANTHR-DATA).

→ Draft concept for recruiting volunteers for anthropometric survey (Deliverable D2.3)

T2.6 In cooperation with CEN/TC 122/WG 1, develop a working draft on standardized measurement protocol which can undergo the usual standardization process and be published after the formal completion of the project (as EN or CEN/TS).

→ Working draft on standardized measurement protocol (Deliverable D2.4)

T2.7 Analyse epidemiological databases in terms of quality (e.g. self-reported data vs professionally measured data) and the conditions under which they could be used in an anthropometric survey project (access, costs etc.).

→ Report on quality and availability of epidemiological databases (Deliverable D2.5)

T2.8 Review scenarios of ADULT ANTHR-DATA based on the experience and additional knowledge gained in the project (e.g. actual duration of the measurement sessions) and provide revised scenarios, if relevant.

→ Revised scenarios for anthropometric survey (Deliverable D2.6)

- WP3 Pilot study/survey

T3.1 Develop training protocol for measuring protocols and carry out trainings in order to ensure that data obtained by the *Technical project leadership* and the *Anthropometric Pilot Study Participant* are equivalent.

T3.2 Interlaboratory test according to EN ISO 20685-1

T3.3 Test draft concept for recruiting volunteers for anthropometric survey (D2.3).

Further develop/finalize recruitment concept based on the experiences gained.

→ Concept for recruitment for anthropometric survey (Deliverable D3.1)

T3.4 Conduct an anthropometric pilot study/survey based on the measurement protocol (D2.1) in at least one European country with full measurement protocol (including human physical strength and skinfold measures).

The sample size shall be at least $X_{Plan\ A}$ persons measured according to anthropometry Plan A (see Annex X.3.1), from whom at least $X_{Plan\ B}$ persons are measured in additon according to anthropometry Plan B (see Annex X.3.2).

Furthermore, at least $X_{Strength}$ persons are measured according to

- the human physical strength plan (see Annex X.3.3) and
- the skinfold measures plan (see Annex X.3.4).

The persons who are measured according to the human physical strength and skinfold measures plans should, if possible, correspond to persons from the anthropometry measurements sample. Deviations, e.g. due to organizational reasons, shall be approved by CEN/TC 122/WG 1.

The extended anthropometric pilot study/survey shall be offered in three alternative configurations (Options A, B and C), differing in the sample size and scope of measurements.

Tenderers are required to submit separate technical and financial offers for each option.

Each option constitutes an independent offer with a clearly defined scope of services and will be evaluated separately in accordance with the award criteria set out in Section VI.

Only one option will be selected for contract award.

Options	$X_{Plan\ A}$ *(persons measured according to anthropometry Plan A)*	$X_{Plan\ B}$ *(persons measured according to anthropometry Plan B)*	$X_{Strength}$ *(persons measured according to human physical strength and skinfold measurement plans)*
A	200	30	100
B	250	40	125
C	300	40	150

The sample shall be appropriately stratified with respect to age and gender (e.g. ~50 % male/female and stratification in 3 age groups: 16 - 29 years / 30 – 49 years / 50 – 69 years, each group represented with at least 50 persons).

Annex X.1 includes additional information on the required 3D acquisitions.

T3.5 Combine data from Technical Project Leadership and Anthropometric Pilot Study Participant based on data flow protocol.

Process data and generate statistical summaries.

→ ***Statistical summaries (Deliverable D3.2)***

T3.6 Evaluate data in view of confirming correlations between measures (e.g. human physical strength and skinfold measures).

→ ***Report on data evaluation (e.g. correlation of measurements) (Deliverable D3.3)***

- Interim and final reports, including the deliverables related to the different work packages.

III.2.3 *Anthropometric Pilot Study Participant*

Anthropometric Pilot Study Participant will contribute to WP 3 (Pilot study/survey) and be responsible for carrying out an anthropometric pilot study/survey in one European country. Their tasks will in particular include:

- WP3 Pilot study/survey

T3.1 Participate in training carried out by the *Technical Project Leadership* in order to ensure that data obtained by the *Technical Project Leadership* and the *Anthropometric Pilot Study Participant* are equivalent.

T3.2 Interlaboratory test according to EN ISO 20685-1

T3.3 Test draft concept for recruiting volunteers for anthropometric survey (D2.3).

Support *Technical Project Leadership* in further developing/finalizing recruitment concept based on the experiences gained.

T3.4 Conduct an anthropometric pilot study/survey based on the measurement protocol (D2.1) in at least one European country with measurement protocol excluding human physical strength and skinfold measures).

The sample size shall be at least 200 persons measured according to anthropometry Plan A from which at least which include at least at least 30 persons measured according to

- anthropometry Plan A (see Annex X.3.1) and
- anthropometry Plan B (see Annex X.3.2)

The sample size shall be at least 30 persons in additon are measured according to anthropometry Plan B (see Annex X.3.2)

The sample shall be appropriately stratified with respect to age and gender (e.g. ~50 % male/female and stratification in 3 age groups: 16 - 29 years / 30 – 49 years / 50 – 69 years, each group represented with at least 50 persons).

Annex X.1 includes additional information on the required 3D acquisitions.

T3.5 Deliver the anthropometric data of the anthropometric pilot study/survey to the Technical Project Leadership in a format specified by the Technical Project Leadership.

- Final report.

III.3 Timeframe

This project shall be finalized by **2028-04-30**. The following deadlines are specified for the tasks of the different work packages (milestones (MS) to be communicated to EC and deliverables (Dx.x) to be submitted to EC are highlighted in **bold** letters):

- **WP 1 Anthropometric data needs for machinery/PPE:**

T1.1	Development of a methodology (machinery) **– *MS1***	2026-12-31
T1.2	Development of a methodology (PPE)	2026-12-31
T1.3	Data needs identified (machinery)	2027-03-31
T1.4	Data needs identified (PPE)	2027-03-31
T1.5	Workshop (machinery) – ***MS2***	2027-03-31
T1.6	Workshop (PPE) – ***MS2***	2027-03-31
T1.7	Data need validation	2027-04-30
	Deliverable D1.1 (Report on anthropometric data needs)	***2027-05-15***
T1.8	Measurement protocol finalized	2027-07-31
T1.9	Alternative approaches developed	2028-03-31
	Deliverable D1.2 (Report on alternative approaches)	***2028-03-31***

- **WP2 Measurement protocol and related processes**

T2.1	Measurement protocol finalized	2027-06-30
	Deliverable D2.1 Measurement protocol	***2027-06-30***
T2.2	Strength measurement devices and methods – ***MS3***	2027-06-30
T2.3	Measurement protocol optimized	2027-07-31
T2.4	Data flow protocol developed – ***MS4***	2027-10-31
	Deliverable D2.2 Data flow protocol	***2027-10-31***
T2.5	Concept for recruiting volunteers developed – ***MS5***	2027-06-30
	Deliverable D2.3 Draft concept for recruiting volunteers	***2027-06-30***
T2.6	Working draft on standardized measurement protocol	2028-04-30

	Deliverable D2.4 Working draft	***2028-04-30***
T2.7	Epidemiological databases analysed	2028-03-31
	Deliverable D2.5 Report on epidemiological databases	***2028-03-31***
T2.8	Scenarios of ADULT ANTHR-DATA reviewed	2028-04-15
	Deliverable D2.6 Revised anthropometric survey scenarios	***2028-04-15***

- **WP3 Pilot study/survey**

T3.1	Training – ***MS6***	2027-08-31
T3.2	Interlaboratory test according to EN ISO 20685-1	2027-09-30
T3.3	Concept for recruiting volunteers tested and finalized	2028-04-30
	Deliverable D3.1 Concept for recruitment	
T3.4	Anthropometric pilot study/survey completed – ***MS7***	2028-02-29
T3.5	Data processed and statistical summaries generated – ***MS8***	2028-03-31
	Deliverable D3.2 Statistical summaries	***2028-04-15***
T3.6	Data evaluated	2028-04-15
	Deliverable D3.3 Report on data evaluation	***2028-04-15***

- **Reporting**

Interim report (which will be submitted to EC)	2027-04-30
Final report (which will be submitted to EC)	2028-04-30

The below schedule is a proposal/draft for the timeline of the various tasks of the project. It is subject to change, e.g. the actual start of the project might be earlier or later depending on the conclusion of the contract between DIN and the respective subcontractor. Or, the subcontractor might decide to implement a different time schedule (taking into account above mentioned binding deadlines).

Work Package 1: Anthropometric data needs for machinery/PPE

Year	2026								2027												2028			
Months	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
T1.1 Methodology (mach)																								
T1.2 Methodology (PPE)																								
T1.3 Data needs (mach.)																								
T1.4 Data needs (PPE)																								
T1.5 Workshop (machine)																								
T1.6 Workshop (PPE)																								
T1.7 Validate data needs																								
T1.8 Support protocol																								
T1.9 Altern. approaches																								

Work Package 2: Measurement protocol and related processes

Year	**2026**								**2027**												**2028**			
Months	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
T2.1 Finalize protocol																								
T2.2 Strength methods																								
T2.3 Optimize protocol																								
T2.4 Data flow protocol																								
T2.5 Recruiting concept																								
T2.6 Working draft																								
T2.7 Epidemiological DB																								
T2.8 Review scenarios																								

Work Package 3: Pilot study/survey																								
Year	**2026**								**2027**												**2028**			
Months	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
T3.1 Training																								
T3.2 Interlaboratory test																								
T3.3 Recruiting																								
T3.4 Pilot study/survey																								
T3.5 Data processing																								
T3.6 Data evaluation																								

IV Financial support

The European Commission and EFTA have decided to provide financial support to research on anthropometric data needs for machinery/PPE, development and finalization of measurement protocol and related processes for an anthropometric survey and for conducting an extended pilot study. The financial support from the European Commission and EFTA is based on the SMP 'Single Market Programme Regulation' (including its Financing Decision) and the MGA (Multi or mono beneficiary(ies) Grant Agreement). Unless specified otherwise, costs of external subcontractors 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 *MGA N° 101304642*and also in compliance with EC Financial Regulation, and be justified. 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 *MGA N°* 101304642, including those relating to liability, ownership of results, confidentiality, conflict of interests, publicity, evaluation, assignment, checks and audits.

The subcontractors' 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…).

Costs incurred before the Grant Agreement is signed (unless, exceptionally differently agreed with the EC), before the selection procedure is finalized and before the contract between DIN and the respective subcontractor is signed by both parties, will not be considered as eligible for EU financial support.

V Selection criteria

V.1 Technical project leadership

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 European and/or International standardization for at least 3 years;
   - experience in the field of anthropometry (including human physical strength) for at least 10 years;
   - experience in planning and performing anthropometric and strength surveys using both traditional and 3D scanning methods;
   - experience with comparable projects on anthropometric surveys on body measures, physical strength 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;
   - appropriate industrial and/or academic background of the relevant personnel involved;
   - established data protection management system with a mandatory Data Protection Officer (DPO) designated in the official way in accordance with GDPR;

V.2 Researcher on Anthropometry applied to Human-Machinery/PPE Interaction

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 European and/or International standardization for at least 3 years;
   - experience in the field of anthropometry (including human physical strengths) for at least 10 years;

- experience with comparable projects on the application of anthropometric data for industrial application, product development and comparative product evaluation in particular in the context of machinery and PPE;
- experience as an evaluator of anthropometric data in the sense of EN ISO 7250-1, EN ISO 15535 and EN ISO 20685;
- appropriate industrial and/or academic background of the relevant personnel involved.

V.3 Anthropometric Pilot Study Participant

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;
    - experience in planning and performing anthropometric surveys using both traditional and 3D scanning methods;
    - experience with comparable projects on anthropometric surveys 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;
    - appropriate industrial and/or academic background of the relevant personnel involved;
    - established data protection management system with a mandatory Data Protection Officer (DPO) designated in the official way in accordance with GDPR;

VI Award criteria

VI.1 Technical project leadership

The selection of the most suitable candidate will be made on the basis of the following criteria:

1. Price award criterion
    - Price (30 points)

2. Qualitative award criteria
    - Quality of the proposed methodology (18 points)
    - Organization of the work and allocation of resources (20 points)
    - Quality control measures (12 points)
    - Ability to submit agreed deliverables at specified dates and detailed cost estimations (8 points)

3. Sample size of anthropometric pilot survey
    - Sample size
        - Option A (0 points)
        - Option B (6 points)
        - Option C (12 points)

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.

Each option (A, B and C) submitted by a tenderer will be evaluated separately and independently against the award criteria.
For each option, a total score will be calculated based on the price and qualitative criteria.
The contract will be awarded to the tender, including the respective option, that achieves the highest overall score and complies with all requirements, provided that the total price of the selected option is within the available project budget.

If the highest-ranked option exceeds the available budget, the next highest-ranked option within the available budget will be selected.

V.2 Researcher on Anthropometry applied to Human-Machinery/PPE Interaction

1. Price award criterion
    - Price (30 points)

2. Qualitative award criteria
    - Quality of the proposed methodology (25 points)
    - Organization of the work and allocation of resources (20 points)
    - Quality control measures (15 points)
    - Ability to submit agreed deliverables at specified dates and detailed cost estimations (10 points)

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.

V.3 Anthropometric Pilot Study Participant

1. Price award criterion
    - Price (30 points)

2. Qualitative award criteria
    - Quality of the proposed methodology (15 points)
    - Organization of the work and allocation of resources (30 points)
    - Quality control measures (15 points)
    - Ability to submit agreed deliverables at specified dates and detailed cost estimations (10 points)

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.

VII 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.
- Candidates who submit their application after the submission deadline.
- Candidates with any conflict of interest.

VIII Tenders

Tenders shall be sent to anthropomachppe@din.de , as soon as possible, to be received at the latest by ***2026-06-30***. The tender shall be in English and contain:

- Curriculum Vitae of each relevant person participating in the project, demonstrating the necessary expertise for the respective ‘Advertised position’;
- A schedule and a description of the execution of the tasks which will be carried out in the project as such;

- A table in the format given in Annex A with detailed information on the costs (applications for the *Technical Project Leadership* shall include one table with information on the costs for each of the options specified in III.2.2, task T3.4);
- 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, 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.

Please note that, to ensure equal treatment of all tenders, it is not possible to modify offers after their submission in relation to the technical and financial proposals. Therefore, incompleteness in this section can only result in negative impact for the evaluation of award criteria. Please note also that proposals deviating from the technical specifications may be rejected for non-conformity.

Candidates may apply for more than one role. However, no candidate will be selected for more than one position. In case of multiple applications candidates shall state their priorities.

The two extended anthropometric pilot study/surveys will be carried out in two different European countries. Consequently, it is not possible to select applications of the *Technical Project Leadership* and the *Anthropometric Pilot Study Participant* which both offer to carry out the extended anthropometric pilot study/survey in the same country. The selection of the *Technical Project Leadership* will be carried out before the selection of the *Anthropometric Pilot Study Participant*. Consequently, applications for the *Anthropometric Pilot Study Participant* offering to carry out the extended anthropometric pilot study/survey in the country already covered by the *Technical Project Leadership* will be excluded from the selection process.

Applications for the Technical Project Leadership shall include offers for all three options (A, B and C), as specified in Section III.2.2. task T3.4.
Each option will be treated as an independent offer for evaluation purposes. The evaluation will result in a ranking of all submitted options across all tenderers.
The contract will be awarded to the highest-ranked option across all tenders, provided that the selected option is within the available project budget.
This approach ensures a transparent and objective comparison of all tenders and their respective configurations.

Tenders should be sent by legal representative, i.e. to be considered, any possible association has to be formalized according to the local legislation before submitting the tender. Working teams, partnerships and other groups of people, particularly under the aegis of an institute qualify as contractors for the service contracts awarded in the course of this Call for Tender. Partnerships or joint ventures and other legally binding co-operations regardless of their organizational form qualify as well, provided they are recognized entities under the applicable national laws. Potential candidates may come from the public sector as well as from the private industry. It is essential however that the qualifications and experience of the individual fulfilling the tasks are properly described.

It is possible to apply for a work package as a consortium. If a consortium is formed, one institute needs to be identified as the leader of the consortium and the division of labour between the consortium members should be clearly described and justified. In this case, only the leader of the consortium would sign the contract with the contractor and ensure that all tasks are fulfilled and is responsible for the justifications and expenses of the consortium members. It is essential however that all members of the consortium are properly identified within the offer.

Regarding question concerning the information provided in this call for tender or in case of need for clarification or additional information please contact the secretary of CEN/TC 122/WG 1 "Anthropometry", Sebastian Lentz (sebastian.lentz@din.de).

If due to queries or other reasons supplementary information to this call for tender is required, this will be published on this website of DIN.

Please send your application to

anthropomachppe@din.de

Annex 1

The following table shall be used in the tender to give detailed information on the costs. Since the *Technical project leadership* will be involved in more than one work package costs shall be assigned to the relevant work packages accordingly.

Organisation / Staff level	Daily rate	Number of person-days	Personnel cost	Travel budget	Others (Supplies, Consumables)	**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 2: Model service contracts for advertised positions

Annex 2.1: Model service contract for the Technical Project Leadership

Service contract

Between

DIN Deutsches Institut für Normung e. V.
Am DIN-Platz
Burggrafenstraße 6
10787 Berlin
hereinafter referred to as "DIN"

and

…………

hereinafter referred to as the "CONTRACTOR"

Introduction
The European Commission/EFTA have decided to fund project "Anthropometric considerations for machinery/PPE" (AnthropoMachPPE, MGA N° 101304642, CEN/2025-17). This project is dealt with by CEN/TC 122/WG 1 "Anthropometry", the secretariat of which is held by DIN. DIN assures the organizational coordination work on behalf of CEN/TC 122/WG 1.

1. Object of the Service contract
The CONTRACTOR agrees that it will participate as a "Technical Project Leadership" for the duration of the project starting from the conclusion of this contract and finishing by 2028-04-30. It is tasked to produce the following deliverables:

- D2.1 Measurement protocol (including specification of devices and method description for human physcial strength)
- D2.2 Data flow protocol
- D2.3 Draft concept for recruiting volunteers for anthropometric survey
- D2.4 Working draft for standardized measurement protocol (which can form the basis for a future CEN deliverable (EN or CEN/TS))
- D2.5 Report on quality and availability of epidemiological databases
- D2.6 Revised scenarios for anthropometric survey
- D3.1 Concept for recruitment for anthropometric survey
- D3.2 Statistical summaries
- D3.3 Report on data evaluation (e.g. correlation of measurements)
- Interim and final reports, including above deliverables related to WP 2 and WP 3.

2. Duties of the CONTRACTOR
The CONTRACTOR's duties will include:

- WP1 Anthropometric data needs for machinery/PPE:

  T1.5 Participation at a workshop with relevant CEN/TCs and stakeholders from the machinery sector (organized by *Researcher on anthropometry applied to human-*

machinery/PPE interaction) in order to discuss and confirm the findings of the investigation on data needs.

T1.6 Participation at a workshop with relevant CEN/TCs and stakeholders from the PPE sector (organized by *Researcher on anthropometry applied to human-machinery/PPE interaction*) in order to discuss and confirm the findings of the investigation on data needs.

T1.9 In cooperation with the *Researcher on anthropometry applied to human-machinery/PPE interaction*, develop alternative approaches for addressing specific anthropometric data needs which were not included in the measurement protocol (e.g. estimation based on correlations or, if very specific needs cannot be efficiently covered suggesting separate, supplementary studies).

- WP2 Measurement protocol and related processes

T2.1 Develop and finalize measurement protocol for a survey on anthropometric data (including e.g. measurement devices, anatomical landmarks, standardization of measuring attire, postures) based on the results of ADULT ANTHR-DATA (see Annex X for information from this project) and taking into account the specific anthropometric data needs for machinery and PPE resulting from WP 1 (Report on anthropometric data needs of machinery and PPE sectors provided by *Researcher on Anthropometry applied to Human-Machinery/PPE Interaction* (Deliverable D.1.1)).

All data needs (see WP 1) should be addressed either by inclusion of corresponding anthropometric measures in the measurement programme or – if this is not feasible – by alternative approaches (D1.2).

→ ***Measurement protocol (including specification of devices and method description for human physcial strength) (Deliverable D2.1)***

T2.2 Design and develop devices and methods to measure human physical strength.

T2.3 Set up, test and optimize anthropometric measurement protocol.

T2.4 Develop data flow protocol compliant with the General Data Protection Regulation (GDPR) and set up data processing pipeline.

→ ***Data flow protocol (Deliverable D2.2)***

T2.5 Develop a concept for recruiting volunteers to participate in the anthropometric survey (i.e. to be measured).

Develop a questionnaire for the survey with questions addressed to the survey participants (see Annex X.2 for related information from project ADULT ANTHR-DATA).

→ ***Draft concept for recruiting volunteers for anthropometric survey (Deliverable D2.3)***

T2.6 In cooperation with CEN/TC 122/WG 1, develop a working draft on standardized measurement protocol which can undergo the usual standardization process and be published after the formal completion of the project (as EN or CEN/TS).

→ ***Working draft on standardized measurement protocol (Deliverable D2.4)***

T2.7 Analyse epidemiological databases in terms of quality (e.g. self-reported data vs professionally measured data) and the conditions under which they could be used in an anthropometric survey project (access, costs etc.).

→ ***Report on quality and availability of epidemiological databases (Deliverable D2.5)***

T2.8 Review scenarios of ADULT ANTHR-DATA based on the experience and additional knowledge gained in the project (e.g. actual duration of the measurement sessions) and provide revised scenarios, if relevant.

→ ***Revised scenarios for anthropometric survey (Deliverable D2.6)***

- WP3 Pilot study/survey

T3.1 Develop training protocol for measuring protocols and carry out trainings in order to ensure that data obtained by the *Technical project leadership* and the *Anthropometric Pilot Study Participant* are equivalent.

T3.2 Interlaboratory test according to EN ISO 20685-1

T3.3 Test draft concept for recruiting volunteers for anthropometric survey (D2.3).

Further develop/finalize recruitment concept based on the experiences gained.

→ ***Concept for recruitment for anthropometric survey (Deliverable D3.1)***

T3.4 Conduct an anthropometric pilot study/survey based on the measurement protocol (D2.1) in at least one European country with full measurement protocol (including human physical strength and skinfold measures).

The sample size shall be at least $X_{Plan A}$ persons measured according to anthropometry Plan A (see Annex X.3.1), from whom at least $X_{Plan B}$ persons are measured in additon according to anthropometry Plan B (see Annex X.3.2).

Furthermore, at least $X_{Strength}$ persons are measured according to

- the human physical strength plan (see Annex X.3.3) and
- the skinfold measures plan (see Annex X.3.4).

The persons who are measured according to the human physical strength and skinfold measures plans should, if possible, correspond to persons from the anthropometry measurements sample. Deviations, e.g. due to organizational reasons, shall be approved by CEN/TC 122/WG 1.

The sample shall be appropriately stratified with respect to age and gender (e.g. ~50 % male/female and stratification in 3 age groups: 16 - 29 years / 30 – 49 years / 50 – 69 years, each group represented with at least 50 persons).

Annex X.1 includes additional information on the required 3D acquisitions.

T3.5 Combine data from Technical Project Leadership and Anthropometric Pilot Study Participant based on data flow protocol.

Process data and generate statistical summaries.

→ ***Statistical summaries (Deliverable D3.2)***

T3.6 Evaluate data in view of confirming correlations between measures (e.g. human physical strength and skinfold measures).

→ ***Report on data evaluation (e.g. correlation of measurements) (Deliverable D3.3)***

- Interim and final reports, including the deliverables related to the different work packages.

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 (deadline for tasks not mentioned above are for information purposes only). In case of non-adherence to the target dates, the Commission/EFTA is entitled to cancel the funding.

- **WP 1 Anthropometric data needs for machinery/PPE:**

  T1.1 Development of a methodology (machinery) **– *MS1*** 2026-12-31

  T1.2 Development of a methodology (PPE) 2026-12-31

  T1.3 Data needs identified (machinery) 2027-03-31

  T1.4 Data needs identified (PPE) 2027-03-31

  T1.5 Workshop (machinery) – ***MS2*** 2027-03-31

  T1.6 Workshop (PPE) – ***MS2*** 2027-03-31

  T1.7 Data need validation 2027-04-30

  Deliverable D1.1 (Report on anthropometric data needs) 2027-05-15

  T1.8 Measurement protocol finalized 2027-07-31

  T1.9 Alternative approaches developed 2028-03-31

  Deliverable D1.2 (Report on alternative approaches) 2028-03-31

- **WP2 Measurement protocol and related processes**

  T2.1 Measurement protocol finalized 2027-06-30

  Deliverable D2.1 Measurement protocol 2027-06-30

  T2.2 Strength measurement devices and methods – ***MS3*** 2027-06-30

  T2.3 Measurement protocol optimized 2027-07-31

  T2.4 Data flow protocol developed – ***MS4*** 2027-10-31

  Deliverable D2.2 Data flow protocol 2027-10-31

  T2.5 Concept for recruiting volunteers developed – ***MS5*** 2027-06-30

  Deliverable D2.3 Draft concept for recruiting volunteers 2027-06-30

  T2.6 Working draft on standardized measurement protocol 2028-04-30

  Deliverable D2.4 Working draft 2028-04-30

  T2.7 Epidemiological databases analysed 2028-03-31

  Deliverable D2.5 Report on epidemiological databases 2028-03-31

  T2.8 Scenarios of ADULT ANTHR-DATA reviewed 2028-04-15

  Deliverable D2.6 Revised anthropometric survey scenarios 2028-04-15

- **WP3 Pilot study/survey**

  T3.1 Training – ***MS6*** 2027-08-31

  T3.2 Interlaboratory test according to EN ISO 20685-1 2027-09-30

  T3.3 Concept for recruiting volunteers tested and finalized 2028-04-30

  Deliverable D3.1 Concept for recruitment

  T3.4 Anthropometric pilot study/survey completed – ***MS7*** 2028-02-29

T3.5	Data processed and statistical summaries generated – ***MS8***	2028-03-31
	Deliverable D3.2 Statistical summaries	***2028-04-15***
T3.6	Data evaluated	2028-04-15
	Deliverable D3.3 Report on data evaluation	***2028-04-15***

- **Reporting**

Interim report (which will be submitted to EC)	2027-04-30
Final report (which will be submitted to EC)	2028-04-30

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.

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 <<< EUR XXXX >>>. Invoicing shall be done as follows:

Step 1:	Interim report	up to 35 % of above sum;
Step 2:	Data flow protocol (MS4) & Training (MS6)	up to 35 % of above sum;
Step 3:	Final report (including all deliverables)	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 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. The payment related to the final report (step 3) will be issued after approval of the report by EISMEA/EC and once the funding from EC/EFTA is available. DIN does not have any influence on the timing of the payment made by EC/EFTA.

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]

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 re-instatement 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 , Use of the project data by the CONTRACTOR
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.

The CONTRACTOR is allowed to use data acquired in the project for his own research and scientific purposes under the following conditions:

- the use is covered by the ethical approval of the project by the ethics committee of the CONTRACTOR,
- the data will not be transferred to third parties,
- data protection law is respected,
- DIN is informed about the intended use.

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,
e-mail: sebastian.lentz@din.de

All invoices to DIN shall be addressed as follows:

DIN Deutsches Institut für Normung e. V.
Buchhaltung
Am DIN-Platz
Burggrafenstraße 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.

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.

For DIN Deutsches Institut für Normung e. V.	For the CONTRACTOR
……………	……………
(Stamp)	<<Name, Position>>
	(Stamp)
(Date)	
	(Date)

Annex 3
EC Mandatory Content of an Invoice
Annex X
Information from ADULT ANTHR-DATA project

Annex 2.2: Model service contract for Researcher on Anthropometry applied to Human-Machinery/PPE Interaction

Service contract

Between

DIN Deutsches Institut für Normung e. V.
Am DIN-Platz
Burggrafenstraße 6
10787 Berlin
hereinafter referred to as "DIN"

and

…………

hereinafter referred to as the "CONTRACTOR"

Introduction

The European Commission/EFTA have decided to fund project "Anthropometric considerations for machinery/PPE" (AnthropoMachPPE, MGA N° 101304642, CEN/2025-17). This project is dealt with by CEN/TC 122/WG 1 "Anthropometry", the secretariat of which is held by DIN. DIN assures the organizational coordination work on behalf of CEN/TC 122/WG 1.

1. Object of the Service contract

The CONTRACTOR agrees that it will participate as a "Researcher on Anthropometry applied to Human-Machinery/PPE Interaction" for the duration of the project starting from the conclusion of this contract and finishing by 2028-04-30. It is tasked to produce the following deliverables:

- D1.1 Report on anthropometric data needs of machinery and PPE sectors
- D1.2 - Report on alternative approaches for specific data needs
- Interim and final reports, including above deliverables related to WP 1.

2. Duties of the CONTRACTOR

The CONTRACTOR will have the main responsibility for delivering work package 1 (Anthropometric data needs for machinery/PPE). Its tasks will in particular include:

- WP 1 Anthropometric data needs for machinery/PPE:

T1.1 Development of a methodology to systematically identify the anthropometric data needs of the machinery sector (e.g. based on typology of human-machinery interaction representative for the various types of machines of the machinery sector).

The methodology should be as aligned as possible with the methodology applied to PPE (T1.2).

T1.2 Development of a methodology to systematically identify the anthropometric data needs of the PPE sector (e.g. based on typology of human-PPE interaction representative for the various types of PPE of the PPE sector).

The methodology should be as aligned as possible with the methodology applied to machinery (T1.1).

T1.3 Systematic identification of anthropometric data needs of the machinery sector by applying the corresponding methodology (see T1.1).

T1.4 Systematic identification of anthropometric data needs of the PPE sector by applying the corresponding methodology (see T1.2).

T1.5 Conducting a workshop with relevant CEN/TCs and stakeholders from the machinery sector in order to discuss and confirm the findings of the investigation on data needs.

T1.6 Conducting a workshop with relevant CEN/TCs and stakeholders from the PPE sector in order to discuss and confirm the findings of the investigation on data needs.

T1.7 Comparison of results on anthropometric data needs for machinery and PPE from this project with the anthropometric data needs and measurement programme resulting from ADULT ANTHR-DATA.

→ Report on anthropometric data needs of machinery and PPE sectors (Deliverable D.1.1)

T1.8 Support the *Technical project leadership* in developing and finalizing the measurement protocol for an anthropometric survey (T2.1) taking into account the anthropometric data needs of the PPE and machinery sectors (T1.7).

T1.9 In cooperation with the *Technical Project Leadership*, develop alternative approaches for addressing specific anthropometric data needs which were not included in the measurement protocol (e.g. estimation based on correlations or, if very specific needs cannot be efficiently covered, suggesting separate, supplementary studies).

→ Report on alternative approaches for specific data needs (Deliverable D1.2)

- Interim and final reports, including the deliverables related to WP 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 (deadlines for tasks not mentioned above are for information purposes only). In case of non-adherence to the target dates, the Commission/EFTA is entitled to cancel the funding.

- **WP 1 Anthropometric data needs for machinery/PPE:**

T1.1	Development of a methodology (machinery) **– *MS1***	2026-12-31
T1.2	Development of a methodology (PPE)	2026-12-31
T1.3	Data needs identified (machinery)	2027-03-31
T1.4	Data needs identified (PPE)	2027-03-31
T1.5	Workshop (machinery) – ***MS2***	2027-03-31
T1.6	Workshop (PPE) – ***MS2***	2027-03-31
T1.7	Data need validation	2027-04-30
	Deliverable D1.1 (Report on anthropometric data needs)	***2027-05-15***
T1.8	Measurement protocol finalized	2027-07-31
T1.9	Alternative approaches developed	2028-03-31
	Deliverable D1.2 (Report on alternative approaches)	***2028-03-31***

- **WP2 Measurement protocol and related processes**

T2.1	Measurement protocol finalized	2027-06-30
	Deliverable D2.1 Measurement protocol	***2027-06-30***
T2.2	Strength measurement devices and methods – ***MS3***	2027-06-30
T2.3	Measurement protocol optimized	2027-07-31

T2.4	Data flow protocol developed – ***MS4***	2027-10-31
	Deliverable D2.2 Data flow protocol	***2027-10-31***
T2.5	Concept for recruiting volunteers developed – ***MS5***	2027-06-30
	Deliverable D2.3 Draft concept for recruiting volunteers	***2027-06-30***
T2.6	Working draft on standardized measurement protocol	2028-04-30
	Deliverable D2.4 Working draft	***2028-04-30***
T2.7	Epidemiological databases analysed	2028-03-31
	Deliverable D2.5 Report on epidemiological databases	***2028-03-31***
T2.8	Scenarios of ADULT ANTHR-DATA reviewed	2028-04-15
	Deliverable D2.6 Revised anthropometric survey scenarios	***2028-04-15***

- **WP3 Pilot study/survey**

T3.1	Training – ***MS6***	2027-08-31
T3.2	Interlaboratory test according to EN ISO 20685-1	2027-09-30
T3.3	Concept for recruiting volunteers tested and finalized	2028-04-30
	Deliverable D3.1 Concept for recruitment	
T3.4	Anthropometric pilot study/survey completed – ***MS7***	2028-02-29
T3.5	Data processed and statistical summaries generated – ***MS8***	2028-03-31
	Deliverable D3.2 Statistical summaries	***2028-04-15***
T3.6	Data evaluated	2028-04-15
	Deliverable D3.3 Report on data evaluation	***2028-04-15***

- **Reporting**

Interim report (which will be submitted to EC)	2027-04-30
Final report (which will be submitted to EC)	2028-04-30

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.

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 <<< EUR XXXX >>>. Invoicing shall be done as follows:

Step 1:	Methodologies development (MS1)	up to 25 % of above sum;
Step 2:	Interim report	up to 45 % of above sum;
Step 3:	Final report (including all deliverables)	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 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. The payment related to the final report (step 3) will be issued after approval of the report by EISMEA/EC and once the funding from EC/EFTA is available. DIN does not have any influence on the timing of the payment made by EC/EFTA.

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]

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 re-instatement 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,
e-mail: sebastian.lentz@din.de

All invoices to DIN shall be addressed as follows:

DIN Deutsches Institut für Normung e. V.
Buchhaltung
Am DIN-Platz
Burggrafenstraße 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.

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.

For DIN Deutsches Institut für Normung e. V.	For the CONTRACTOR
……………	……………
(Stamp)	<<Name, Position>>
	(Stamp)
(Date)	
	(Date)

Annex 3
EC Mandatory Content of an Invoice
Annex X
Information from ADULT ANTHR-DATA project

Annex 2.3: Model service contract for the Anthropometric Pilot Study Participant

Service contract

Between

DIN Deutsches Institut für Normung e. V.
Am DIN-Platz
Burggrafenstraße 6
10787 Berlin
hereinafter referred to as "DIN"

and

…………

hereinafter referred to as the "CONTRACTOR"

Introduction

The European Commission/EFTA have decided to fund project “Anthropometric considerations for machinery/PPE” (AnthropoMachPPE, MGA N° 101304642, CEN/2025-17). This project is dealt with by CEN/TC 122/WG 1 “Anthropometry”, the secretariat of which is held by DIN. DIN assures the organizational coordination work on behalf of CEN/TC 122/WG 1.

1. Object of the Service contract

The CONTRACTOR agrees that it will participate as a “Anthropometric Pilot Study Participant” for the duration of the project starting from the conclusion of this contract and finishing by 2028-04-30. It is tasked to produce the following deliverables:

- Final report.

2. Duties of the CONTRACTOR

Anthropometric Pilot Study Participant will contribute to WP 3 (Pilot study/survey) and be responsible for carrying out an anthropometric pilot study/survey in one European country. Their tasks will in particular include:

- WP3 Pilot study/survey

  T3.1 Participate in training carried out by the *Technical Project Leadership* in order to ensure that data obtained by the *Technical Project Leadership* and the *Anthropometric Pilot Study Participant* are equivalent.

  T3.2 Interlaboratory test according to EN ISO 20685-1

  T3.3 Test draft concept for recruiting volunteers for anthropometric survey (D2.3).

  Support *Technical Project Leadership* in further developing/finalizing recruitment concept based on the experiences gained.

  T3.4 Conduct an anthropometric pilot study/survey based on the measurement protocol (D2.1) in at least one European country with measurement protocol excluding human physical strength and skinfold measures).

  The sample size shall be at least 200 persons measured according to anthropometry Plan A from which at least which include at least at least 30 persons measured according to

  - anthropometry Plan A (see Annex X.3.1) and
  - anthropometry Plan B (see Annex X.3.2)

The sample size shall be at least 30 persons in additon are measured according to anthropometry Plan B (see Annex X.3.2)

The sample shall be appropriately stratified with respect to age and gender (e.g. ~50 % male/female and stratification in 3 age groups: 16 - 29 years / 30 – 49 years / 50 – 69 years, each group represented with at least 50 persons).

Annex X.1 includes additional information on the required 3D acquisitions.

T3.5 Deliver the anthropometric data of the anthropometric pilot study/survey to the Technical Project Leadership in a format specified by the Technical Project Leadership.

- Final report.

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 (deadlines for tasks not mentioned above are for information purposes only). In case of non-adherence to the target dates, the Commission/EFTA is entitled to cancel the funding.

- **WP 1 Anthropometric data needs for machinery/PPE:**

T1.1	Development of a methodology (machinery) ***– MS1***	2026-12-31
T1.2	Development of a methodology (PPE)	2026-12-31
T1.3	Data needs identified (machinery)	2027-03-31
T1.4	Data needs identified (PPE)	2027-03-31
T1.5	Workshop (machinery) – ***MS2***	2027-03-31
T1.6	Workshop (PPE) – ***MS2***	2027-03-31
T1.7	Data need validation	2027-04-30
	Deliverable D1.1 (Report on anthropometric data needs)	***2027-05-15***
T1.8	Measurement protocol finalized	2027-07-31
T1.9	Alternative approaches developed	2028-03-31
	Deliverable D1.2 (Report on alternative approaches)	***2028-03-31***

- **WP2 Measurement protocol and related processes**

T2.1	Measurement protocol finalized	2027-06-30
	Deliverable D2.1 Measurement protocol	***2027-06-30***
T2.2	Strength measurement devices and methods – ***MS3***	2027-06-30
T2.3	Measurement protocol optimized	2027-07-31
T2.4	Data flow protocol developed – ***MS4***	2027-10-31
	Deliverable D2.2 Data flow protocol	***2027-10-31***
T2.5	Concept for recruiting volunteers developed – ***MS5***	2027-06-30
	Deliverable D2.3 Draft concept for recruiting volunteers	***2027-06-30***
T2.6	Working draft on standardized measurement protocol	2028-04-30
	Deliverable D2.4 Working draft	***2028-04-30***
T2.7	Epidemiological databases analysed	2028-03-31
	Deliverable D2.5 Report on epidemiological databases	***2028-03-31***

T2.8	Scenarios of ADULT ANTHR-DATA reviewed	2028-04-15
	Deliverable D2.6 Revised anthropometric survey scenarios	***2028-04-15***

- **WP3 Pilot study/survey**

T3.1	Training – ***MS6***	2027-08-31
T3.2	Interlaboratory test according to EN ISO 20685-1	2027-09-30
T3.3	Concept for recruiting volunteers tested and finalized	2028-04-30
	Deliverable D3.1 Concept for recruitment	
T3.4	Anthropometric pilot study/survey completed – ***MS7***	2028-02-29
T3.5	Data processed and statistical summaries generated – ***MS8***	2028-03-31
	Deliverable D3.2 Statistical summaries	***2028-04-15***
T3.6	Data evaluated	2028-04-15
	Deliverable D3.3 Report on data evaluation	***2028-04-15***

- **Reporting**

Interim report (which will be submitted to EC)	2027-04-30
Final report (which will be submitted to EC)	2028-04-30

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.

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 <<< EUR XXXX >>>. Invoicing shall be done as follows:

Step 1:	Training (MS6)	up to 25 % of above sum;
Step 2:	Anthropometric pilot study/survey completed	up to 45 % of above sum;
Step 3:	Final 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 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. The payment related to the final report (step 3) will be issued after approval of the report by EISMEA/EC and once the funding from EC/EFTA is available. DIN does not have any influence on the timing of the payment made by EC/EFTA.

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]

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 re-instatement 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, Use of the project data by the CONTRACTOR

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.

The CONTRACTOR is allowed to use data acquired in the project for his own research and scientific purposes under the following conditions:

- the use is covered by the ethical approval of the project by the ethics committee of the CONTRACTOR,
- the data will not be transferred to third parties,
- data protection law is respected,
- DIN is informed about the intended use.

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,
e-mail: sebastian.lentz@din.de

All invoices to DIN shall be addressed as follows:

DIN Deutsches Institut für Normung e. V.
Buchhaltung
Am DIN-Platz

Burggrafenstraße 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.

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.

For DIN Deutsches Institut für Normung e. V.	For the CONTRACTOR
……………	……………
(Stamp)	<<Name, Position>>
	(Stamp)
(Date)	
	(Date)

Annex 3
EC Mandatory Content of an Invoice
Annex X
Information from ADULT ANTHR-DATA project

Annex 3: EC Mandatory Content of an Invoice

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: • **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: • **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
• **Sequential number based on one or more series, which uniquely indentifies 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**	**Where an exemption is involved or where the customer is liable to pay the tax** further information should be given accordingly : • **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** **OR** • **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** **OR** • **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**
	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: **Obligation to mention the amounts on the invoice in the local currency**
	For Bulgaria, Greece, Hungary, Lithuania, Poland, Romania, UK: **Obligation to issue the invoice in one of the official languages**

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

Annex X

Information from the project “Making harmonised standards inclusive/gender-responsive” (ADULT ANTHR-DATA)

This annex includes information and results from the project ADULT ANTHR-DATA which are relevant for the project AnthropoMachPPE and shall be taken into account by the contractor:

- Required 3D Acquisitions
- Information related to the questionnaire included in the final report of ADULT ANTHR-DATA
- List of Measurements (Scenarios A & B)
- Information on measurement instruments required

X.1 Required 3D Acquisitions

The following figure (Figure 1) provides a visual overview of the capture needed to fulfil the set of measurements included in the core plan of measurements. It indicates the standard full-body postures used for 3D scanning, the dedicated head acquisitions (with and without hair restraint), and the specific hand and foot captures. The figure is intended as a navigational aid to understand session flow and the scope of outputs.

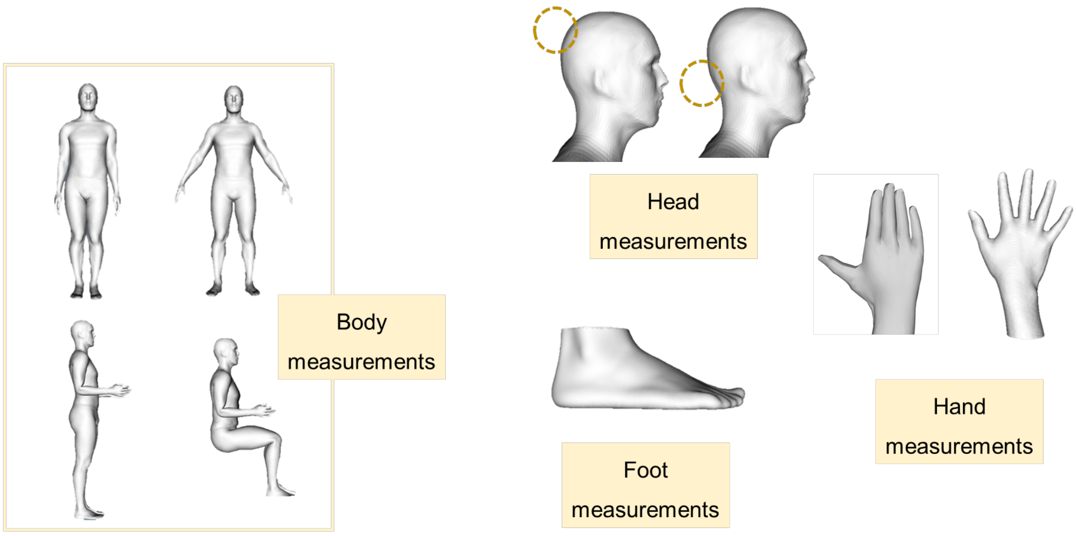

Figure 1. Visual overview of Anthropometric Core Plan: standard full-body postures in the line of ISO 20685-1 (B-ERECT, A-POSE, C-FUNCTIONAL, D-SITTING) and dedicated acquisitions for head (E-HEAD loose hair / E-HEAD), foot (FOOT), and hand (OPEN HAND / CLOSE HAND). Indicative cranial landmarks are shown for landmarked scans; images are illustrative and not to scale.

X.2 Information related to the questionnaire included in the final report of ADULT ANTHR-DATA

Independently of the anthropometric or strength plan selected, a short, standardised questionnaire will be administered to all participants. The questionnaire is essential to interpret anthropometric and strength data and to ensure comparability across countries and subgroups. Extensive evidence shows that body size, body composition and functional performance vary systematically with socioeconomic conditions, education, lifestyle and life-course transitions. These variables will enable the estimation of anthropometric variability across Europe using epidemiological data (typological approach) as well as and the projection of future secular trends based current data.

Specifically, European monitoring consistently documents social gradients in overweight/obesity, with lower education associated with higher prevalence in many Member States, particularly among women; capturing education and related factors is therefore necessary to explain between-group differences in BMI and circumferences derived from stature and mass[1]. Beyond BMI, WHO guidance for the Region identifies social determinants (income, education, work and living conditions) as key drivers of adiposity and related risks, reinforcing the need for standard questionnaire items alongside measurements[2].

Questionnaires also underpin integration with established health surveys: programmes such as NHANES couple physical measures with detailed sociodemographic, lifestyle and health modules to enable valid interpretation, linkage and trend analysis[3]. In addition, life-course and cultural factors can shape anthropometric profiles and functional capacity (e.g., migration background and the menopause transition with implications for fat distribution and cardiometabolic risk), which justifies collecting brief items on reproductive history and cultural background where legally and ethically appropriate[4].

Core content:

- **Sociodemographic:** age, education, employment/occupation, household composition (for deprivation proxies).
- **Health & life-course:** self-reported health/diagnoses relevant to strength or posture; medication affecting fluid balance or muscle function; reproductive history (menstrual status/menopause for women).
- **Lifestyle & context:** smoking, alcohol frequency, physical activity/sport participation, sedentary time, sleep (short items aligned with existing European surveys to minimise burden).
- **Cultural/migration background:** questions regarding cultural and migration background (such as country of birth and years of residence) are included to assess and ensure the representativeness of the sample in relation to the cultural and demographic diversity of the European population. These data are considered sensitive under the GDPR; therefore, they will be analysed only in aggregated form to monitor sampling balance and not for individual profiling.

Design principles

- **Harmonisation:** use wording and response categories interoperable with Eurostat and major European health surveys to facilitate calibration/benchmarking.
- **Concise:** target a respondent burden ≤5 minutes. Prioritise variables with proven association to anthropometry/strength and clear analytic value.

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[1] 'Overweight and Obesity - BMI Statistics', n.d. <https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Overweight_and_obesity_-_BMI_statistics>.

[2] Loring, Belinda & Robertson, Aileen. (2014). Obesity and inequities. Guidance for addressing inequities in overweight and obesity.

[3] National Health and Nutrition Examination Survey (2013) Questionnaires, Datasets and Related Documentation.

http://www.cdc.gov/nchs/nhanes/nhanes questionnaires.htm.

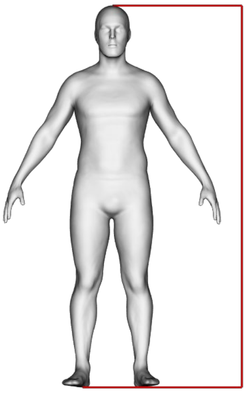
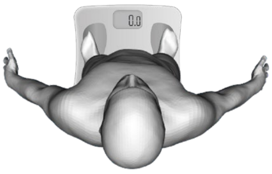
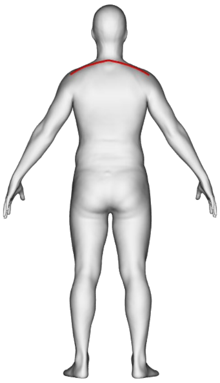
[4] Sylvia Kirchengast, 'Menopause in a Globalized World – A Systematic Literature Review Focussing on the Challenge of Health Problems Associated with Menopausal Transition among Women with a Migration Background', *Maturitas*, 187 (2024), p. 108045, doi:10.1016/j.maturitas.2024.108045.

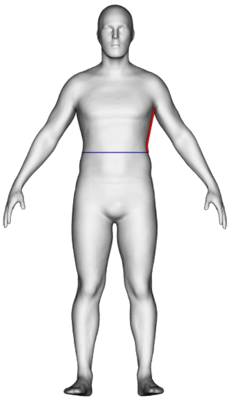
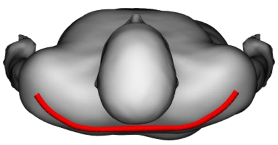
- **Linkage:** assign unique IDs to allow secure linkage of questionnaire records with measurement files and session metadata.
- **Ethics & GDPR:** apply explicit consent, purpose limitation and data minimisation; sensitive items optional and locally approved.

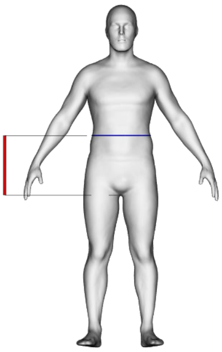
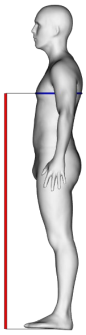
X.3 List of Measurements

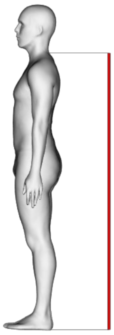
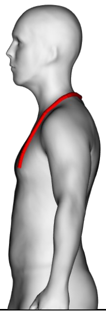
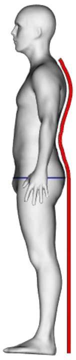
X.3.1 Plan A – ANTHROPOMETRY

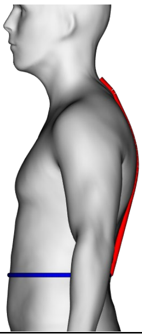
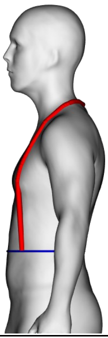
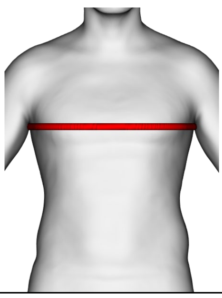
A1. BODY MEASUREMENTS

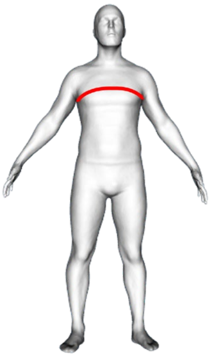
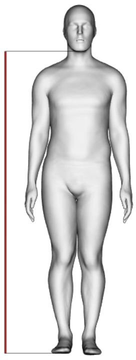
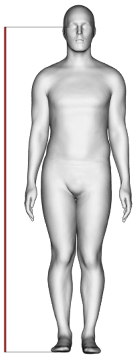
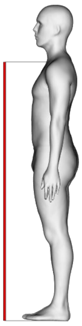
ID	Measurement	Description
1	**STATURE** 	Vertical distance from the floor to the highest point of the head (vertex). Subject stands fully erect with feet together. Head is oriented in the Frankfurt plane.
2	**BODY MASS (WEIGHT)** 	Total mass (weight) of the body. Subject stands on a weighing scale.
3	**ACROSS BACK SHOULDER WIDTH** 	Distance from the left shoulder point, through the back neck point to the right shoulder point. Subject sits or stands erect with shoulders relaxed.
4	**ACROSS BACK WIDTH** 	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.

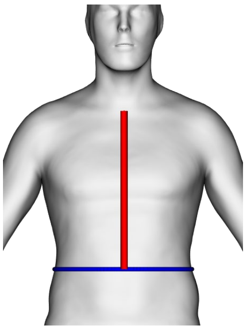
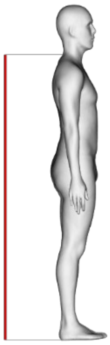
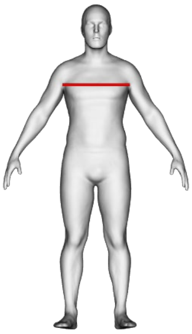
ID	Measurement	Description
5	**ACROSS FRONT WIDTH** 	Distance across the front between the left and right armscye lines. The level of the measure is midway between the shoulder point and the armpit back fold point. Subject sits or stands erect with shoulders relaxed.
6	**ARMPIT GIRTH** 	Horizontal girth of the torso measured at axilla. Subject stands erect with arms hanging freely downward.
7	**SIDE WAIST LENGTH** 	Distance from midpoint of the armpit front fold point and armpit back fold point to waist level
8	**BACK SHOULDER WIDTH** 	Distance between the right and left shoulder points following the surface. Subject stands erect with shoulders relaxed.

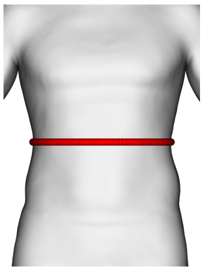
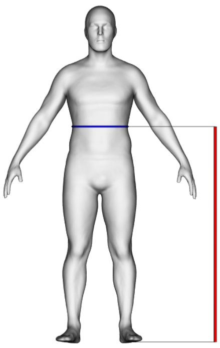
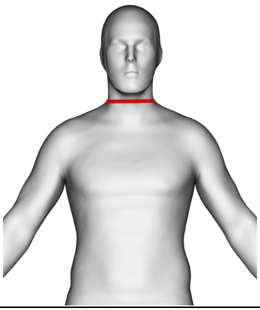
ID	Measurement	Description
9	**BODY DEPTH** 	Maximum horizontal depth of the body. Subject stands erect against a wall with feet together and arms hanging freely downwards.
10	**STRAIGHT BODY RISE** 	Vertical distance between the waist level and the inside leg level. Subject stands fully erect with feet together. Calculation: Waist height minus inside leg height
11	**BUST GIRTH, CONTOURING** 	Horizontal girth measured against the body at a level of the bust points. Subject stands erect with arms hanging freely downward.
12	**BUST HEIGHT, STANDING (CHEST HEIGHT)** 	Vertical distance from the bust point to the ground. Subject stands erect with feet together and head in the Frankfurt plane.

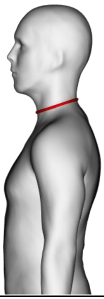
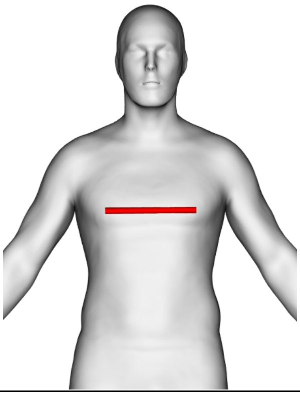
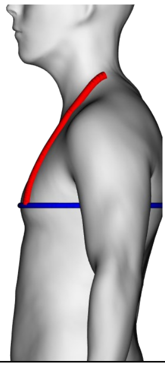
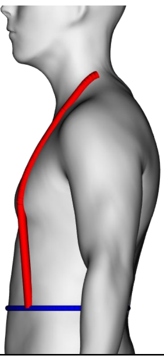
ID	Measurement	Description
13	CERVICAL HEIGHT 	Vertical distance from the back-neck point to the ground. Subject stands erect with feet together and the head in the Frankfurt plane.
14	CERVICAL TO BUST POINT 	Distance from back neck point along neck base line to side neck point, then to bust point. Subject stands erect with arms hanging freely downward, head in the Frankfurt plane.
15	CERVICAL TO GROUND 	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.
16	CERVICAL TO KNEE LENGTH 	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) minus knee height

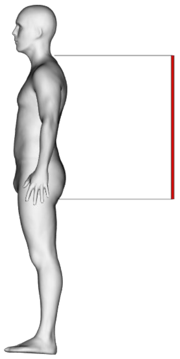
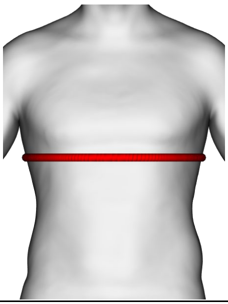
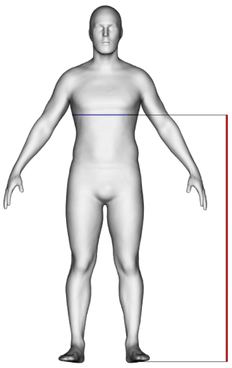
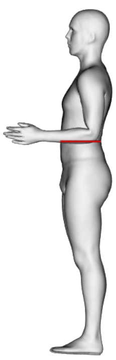
ID	Measurement	Description
17	**CERVICAL TO WAIST LENGTH** 	Distance from back neck point to waist level. Subject stands erect with arms hanging freely downward and shoulder relaxed. Head is in the Frankfurt plane.
18	**CERVICAL TO WAIST LEVEL FRONT LENGTH** 	Distance from back neck point along the neck 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.
19	**BUST DEPTH (NIPPLE)** 	Maximum horizontal depth of the thorax at the level of the bust point (NIPPLE). Subject stands erect with arms hanging freely downwards.
20	**BUST GIRTH** 	Horizontal girth measured at the bust point level. Subject stands erect with arms hanging freely downward. Measurement must be taken in middle breathing position. (EN ISO 7250-1:2017, 6.4.10) - Bust girth (ISO 8559-1:2017, 5.3.4)

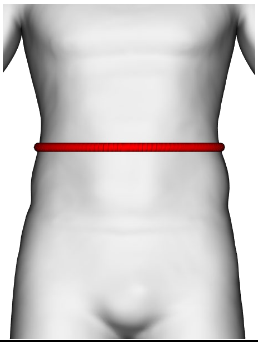
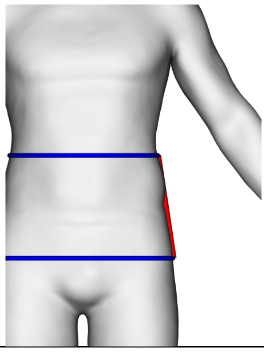
ID	Measurement	Description
21	**UPPER CHEST GIRTH** 	Chest measured from the bust level at centre back, under the armpits and above the bust to the front. Subject stands erect with arms hanging freely downward.
22	**CHIN HEIGHT** 	Vertical distance from the lowest point of the chin to the ground. Subject stands erect with feet together and the head in the Frankfurt plane.
23	**EYE HEIGHT, STANDING** 	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.
24	**FRONT NECK POINT HEIGHT** 	Vertical distance from front neck point to the ground. Subject stands erect with feet together and head in the Frankfurt plane.

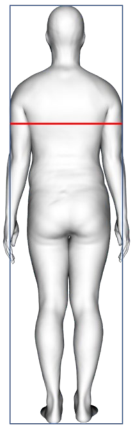
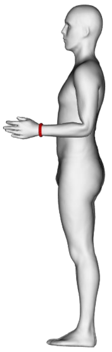
ID	Measurement	Description
25	**FRONT NECK POINT TO WAIST LEVEL** 	Distance, measured vertically from front neck point to waist level. Subject stands erect with arms hanging freely downward.
26	**CERVICAL TO VERTEX HEIGHT** 	Vertical distance from top point to head to side neck point. It can be obtained from stature minus cervical height.
27	**CHEST BREADTH, STANDING (MESOSTERNAL)** 	Horizontal breadth of the torso measured at the level of mesosternale. Subject stands fully erect with feet together and arms hanging freely downwards.
28	**CHEST DEPTH (MESOSTERNAL), STANDING** 	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.

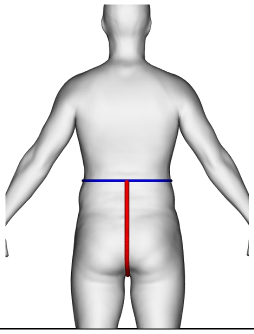
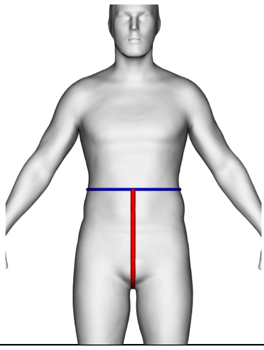
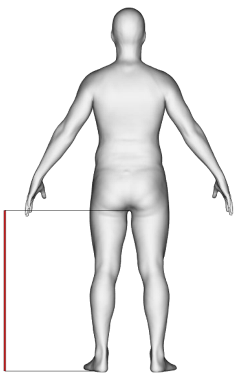
ID	Measurement	Description
29	**MIDRIFF GIRTH** 	Horizontal girth of the body measured at the midriff level (midway between the under-bust and waist levels). Subject stands erect with the abdomen relaxed.
30	**MIDRIFF HEIGHT** 	Vertical distance from the midriff level to the ground. Subject stands erect with feet together and head in the Frankfurt plane.
31	**NECK BASE GIRTH** 	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.
32	**NECK BASE WIDTH** 	Distance between the side neck points. Subject stands erect with feet together and arms hanging freely downward and head on the Frankfurt point.

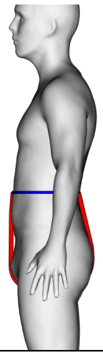
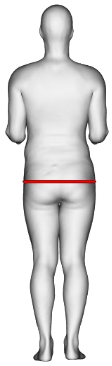
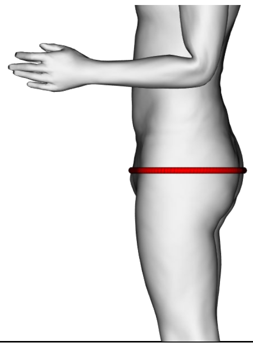
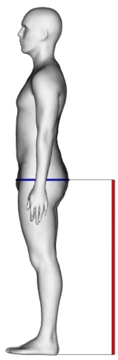
ID	Measurement	Description
33	**NECK GIRTH** 	Girth of the neck at a point just below the bulge at the thyroid cartilage (Adam's apple), and measured perpendicular to the longitudinal axis of the neck. Subject sits or stands erect with head in the Frankfurt plane.
34	**NIPPLE TO NIPPLE BREADTH** 	Distance between the bust points. Subject stands erect with feet together and arms hanging freely downwards.
35	**SIDE NECK POINT TO BUST POINT** 	Distance from the neck point to the bust point. Subject stands erect with arms hanging freely downward, head in the Frankfurt plane.
36	**SIDE NECK POINT TO WAIST LEVEL** 	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.

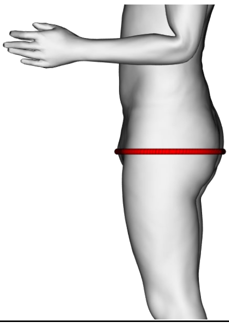
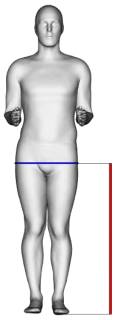
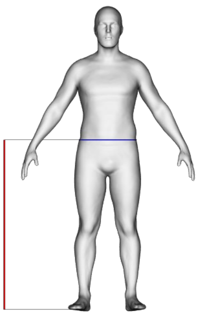
ID	Measurement	Description
37	**TORSO HEIGHT** 	Vertical distance from back neck point to the inside leg level. Calculation: Back neck height minus inside leg height.
38	**UNDERBUST GIRTH** 	Horizontal girth of the body at the under bust level (level directly below breast). Subject stands erect with arms hanging freely downwards.
39	**UNDERBUST HEIGHT** 	Vertical distance from the underbust point to the ground. Subject stands erect with feet together and head in the Frankfurt plane.
40	**WAIST DEPTH, STANDING** 	Measured from the front to the back of the abdomen, at the level of the natural waist (or halfway between the last rib and the top of the hip (iliac crest) for men and children). The person stands erect, weight evenly balanced and arms folded.

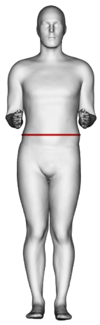
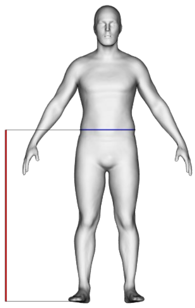
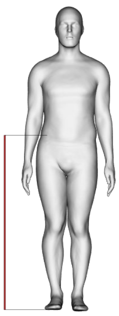
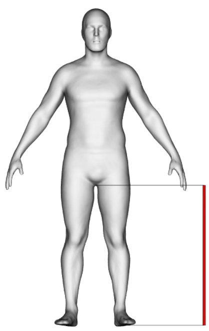
ID	Measurement	Description
41	**WAIST GIRTH** 	Horizontal circumference of the trunk at a level midway between the lowest ribs and the upper iliac crest. Subject stands fully erect with feet together and is asked to relax the abdominal muscles.
42	**WAIST HEIGHT** 	Vertical distance from the waist level (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.
43	**SIDE WAIST TO HIP** 	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 20º angle with the side of the body and abdomen relaxed.
44	**WAIST TO WAIST OVER THE SHOULDER LENGTH** 	Waist to waist over the shoulder length.

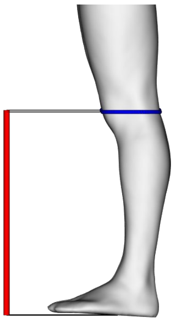
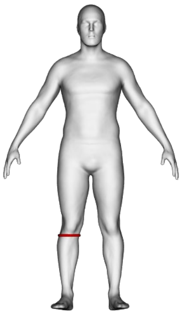
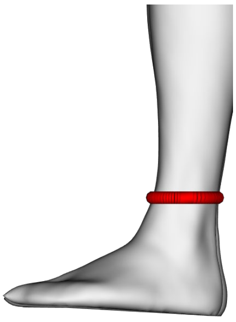
ID	Measurement	Description
45	**BODY BREADTH** 	Measured horizontally across the maximum breadth of the body. The person stands erect with the arms hanging loosely at the sides
46	**WRIST GIRTH** 	Minimum circumference of wrist at the level of the radial styloid, with the hand outstretched. The tape passes just distal to the ulnar styloid. Subject holds forearm horizontal with hand outstretched and fingers extended.
47	**BUTTOCK TO ABDOMEN DEPTH, STANDING** 	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.
48	**CALF GIRTH** 	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.

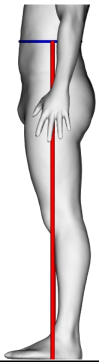
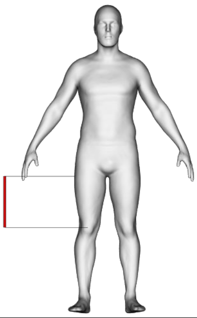
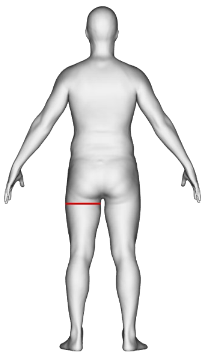
ID	Measurement	Description
49	**CENTRE TRUNK LENGTH** 	Distance from back neck point through crotch to the center of the front neck point. Subject stands erect with legs shoulder width apart and arms hanging freely downward.
50	**BACK CROTCH LENGTH** 	Distance from the center of the back at the waist 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 20Âº angle with the side of the body.
51	**CROTCH FRONT LENGTH** 	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 20Âº angle with the side of the body.
52	**CROTCH LEG HEIGHT** 	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.

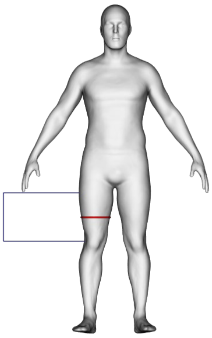
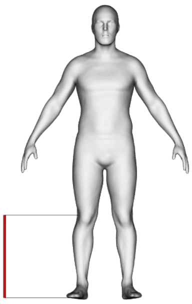
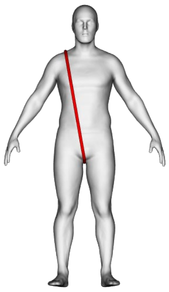
ID	Measurement	Description
53	**TOTAL CROTCH LENGTH** 	Distance from the center of the waist level at the front of the body, through the crotch (inside leg level), to the center of the back-waist level. Avoid any constriction at the crotch. Subject stands erect with legs shoulder width apart.
54	**HIP BREADTH** 	Maximum horizontal distance across the hips.
55	**HIP GIRTH** 	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.
56	**HIP HEIGHT** 	Vertical distance from the hip level to the ground. Subject stands erect with feet together.

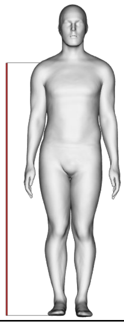
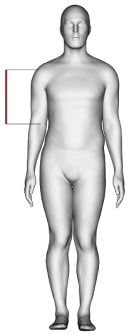
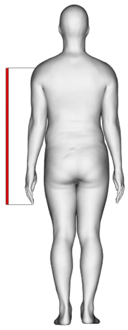
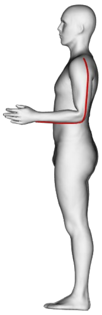
ID	Measurement	Description
57	**MAXIMUM HIP GIRTH** 	Maximum horizontal girth of the body below the hip level. Subject stands erect with feet together with the abdomen relaxed.
58	**MAXIMUM HIP LEVEL HEIGHT** 	Vertical distance from the level of maximum hip girth to the ground. Subject stands fully erect with feet together.
59	**TOP HIP GIRTH** 	Horizontal girth of the body measured at the top hip level. Subject stands erect with feet together with the abdomen relaxed.
60	**TOP HIP HEIGHT** 	Vertical distance from the top hip height (midway between the waist and hip levels) to the ground. Subject stands fully erect with feet together.

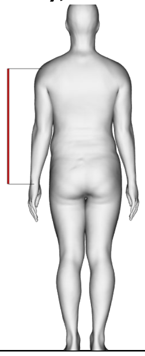
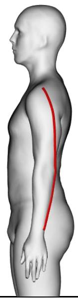
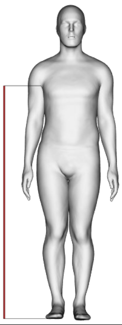
ID	Measurement	Description
61	**UPPER HIP GIRTH** 	Horizontal girth of the body measured at the upper hip level. Subject stands erect with feet together with the abdomen relaxed.
62	**UPPER HIP HEIGHT** 	Vertical distance from the upper hip level (midway between the top-hip and waist level) to the ground. Subject stands fully erect with feet together.
63	**ILIAC SPINE HEIGHT, STANDING** 	Vertical distance from the floor to the most downward-directed point of the iliac crest (iliospinale anterius). Subject stands fully erect with feet together.
64	**INSIDE LEG LENGTH** 	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).

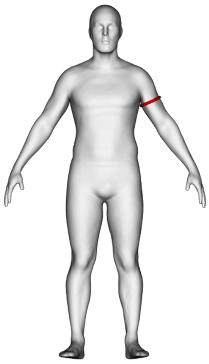
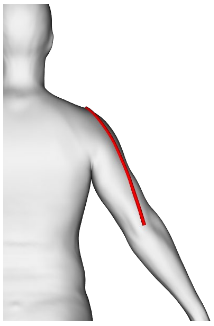
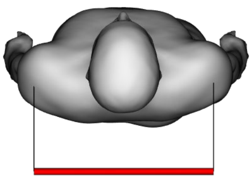
ID	Measurement	Description
65	**KNEE GIRTH** 	Horizontal girth of the knee at the level of the centre point of knee-cap. Subject stands erect with feet shoulder width apart.
66	**KNEE HEIGHT** 	Vertical distance from the center point of the knee cap to the ground. Subject stands erect with feet together.
67	**LOWER KNEE GIRTH** 	Horizontal girth of the lower leg just below the patella (knee-cap). Subject stands erect with legs shoulder width apart.
68	**MINIMUM LEG GIRTH** 	Minimum horizontal girth of the lower leg just above the ankle bones. Subject stands erect.

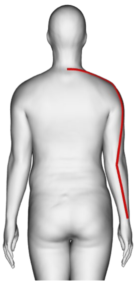
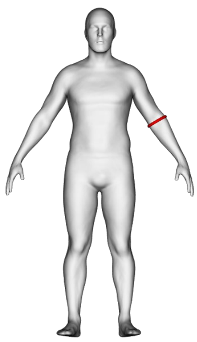
ID	Measurement	Description
69	**OUTSIDE LEG LENGTH** 	Distance down the side of the body from the waist level following the contour to the hip level, the vertically to the ground. Subject stands erect with feet together and arms abducted to form a 20º angle with the side of the body.
70	**THIGH GIRTH** 	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.
71	**THIGH LENGTH** 	Vertical distance between the inside leg level and the center point of knee cap. Calculation: Inside leg height minus knee height.
72	**MAXIMUM THIGH BREADTH** 	Maximum horizontal breadth of the thigh.

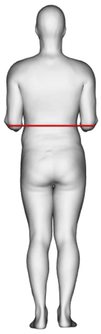
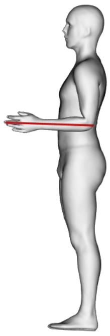
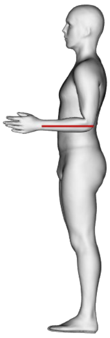
ID	Measurement	Description
73	**MAXIMUM THIGH DEPTH** 	Maximum horizontal thigh depth.
74	**MID-THIGH GIRTH** 	Horizontal girth of the thigh measured midway between the inside leg level and the center of knee cap. Subject stands erect with legs shoulder width apart.
75	**TIBIAL HEIGHT (MEDIAL)** 	Vertical distance from the floor to the tibiale. Subject stands fully erect with feet together.
76	**DIAGONAL TRUNK GIRTH** 	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.

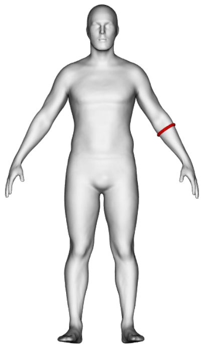
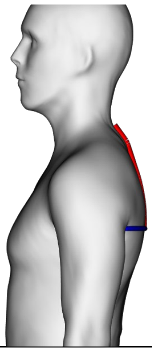
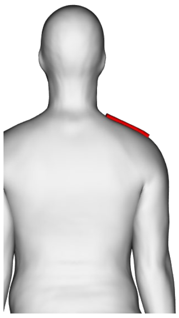
ID	Measurement	Description
77	**ACROMION HEIGHT, STANDING** 	Vertical distance from the floor to the acromion. Subject stands fully erect with feet together. Shoulders are relaxed, with arms hanging freely.
78	**SHOULDER (ACROMION) TO ELBOW CREASE** 	Measured vertically from the bony tip of the shoulder (acromion) to the elbow crease (as seen from the front of the arm). The person sits or stands with the arm hanging straight at the side.
79	**ARM LENGTH (SHOULDER TO FINGERTIP)** 	Measured from the bony tip of the shoulder (acromion) to the tip of the outstretched middle finger. The arm should be straight.
80	**ARM LENGTH (SHOULDER TO WRIST), FLEXED** 	Contoured. Measured from the bony tip of the shoulder (acromion), over the tip of the elbow (olecranon) to the bony point on the wrist. The person stands erect, one hand on the hip, thumb towards the back, fingers in front, wrist kept in line with the forearm.

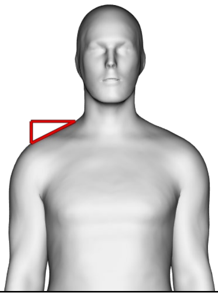
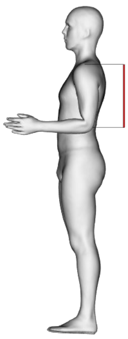
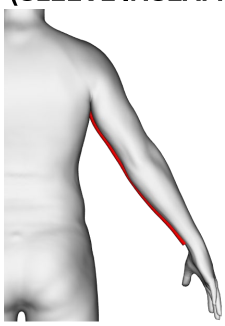
ID	Measurement	Description
81	**ARM LENGTH (SHOULDER TO WRIST), STRAIGHT** 	Measured vertically from the bony tip of the shoulder (acromion) to the wrist crease, just beyond the bony protrusion on the little finger side of the hand (ulnar styloid process). The person sits or stands with the arm hanging straight at the side.
82	**OUTER ARM LENGTH** 	Distance from shoulder point to wrist point. Calculation: Back neck point to wrist length minus 50 % of the shoulder width (through back neck point)
83	**CHEST (ARMPIT, AXILLA) HEIGHT** 	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.
84	**ARMSCYE GIRTH** 	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.

ID	Measurement	Description
85	**ARMSCYE FRONT TO BACK WIDTH** 	Horizontal distance between the back and front armscye fold points. Subject stands erect with feet together and arms hanging freely downwards.
86	**UPPER ARM GIRTH** 	Girth of the upper arm measured midway between the shoulder point and elbow point. Subject stands erect with arms abducted to form a 20º angle with the side of the body.
87	**UPPER ARM LENGTH** 	Distance contoured from the shoulder point to the elbow point (olecranon)
88	**SHOULDER (BIACROMIAL) BREADTH** 	Distance along a straight line from acromion to acromion. The subject sits or stands fully erect, with shoulders relaxed.

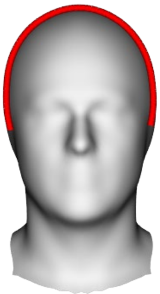
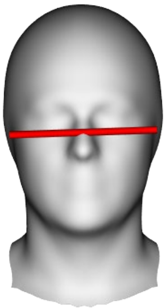
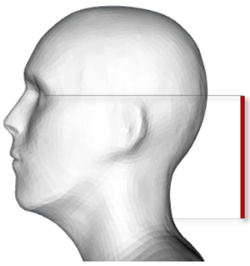
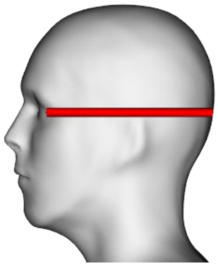
ID	Measurement	Description
89	**SHOULDER (BIDELTOID) BREADTH** 	Horizontal distance across the maximum lateral protrusions of the right and left deltoid muscles. Subject sits or stands fully erect with shoulders relaxed.
90	**CERVICAL TO WRIST LENGTH** 	Distance across the shoulder and down the arm from 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.
91	**ELBOW HEIGHT, FLEXED** 	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.
92	**ELBOW GIRTH, STRAIGHT ARM** 	Girth of the elbow at the elbow point. Subject stands erect with the arms hanging freely downward.

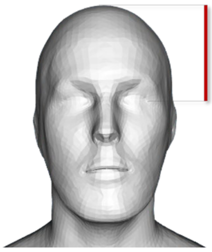
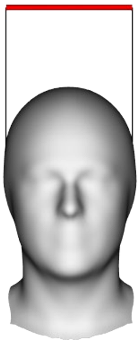
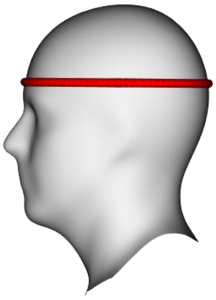
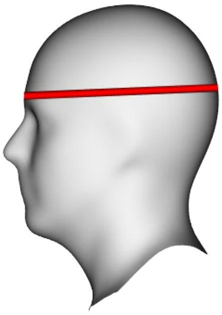
ID	Measurement	Description
93	**ELBOW TO ELBOW BREADTH** 	Maximum horizontal distance between the lateral surfaces or the elbow region. The subject sits or stands erect with shoulders relaxed and upper arms hanging down. The upper portions of the upper arms are in contact with the sides of the body. Forearms are extended horizontally and parallel to each other and the floor.
94	**ELBOW TO FINGERTIP LENGTH** 	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.
95	**ELBOW TO WRIST LENGTH** 	Horizontal distance from olecranon to ulnar stylion. Subject sits or stands erect, with the upper arms hanging freely downwards, and the forearms horizontal.
96	**EYE TO ACROMION HEIGHT** 	Calculation: Eye height standing minus shoulder height standing.

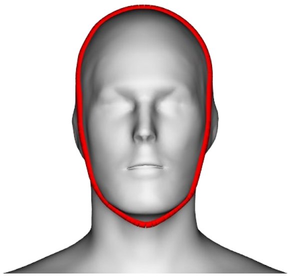
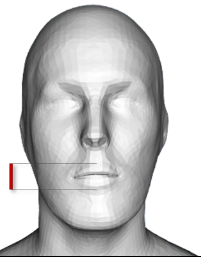
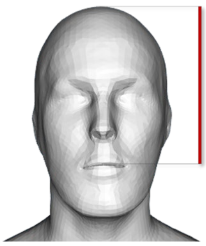
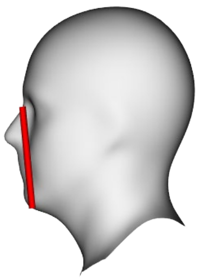
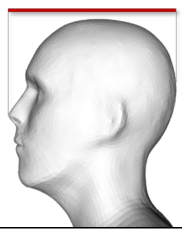
ID	Measurement	Description
97	**FOREARM GIRTH** 	Measured around the maximum diameter of the forearm. The person stands erect, with shoulders and arms relaxed by side.
98	**FOREARM GIRTH, FLEXED** 	The maximum circumference of the forearm, one-third of the distance from olecranon to ulnar styloid. Subject stands with the right upper arm extended forward horizontally and the elbow flexed about 90°. The fist is clenched and held facing the head. Note the surface distance between the olecranon and ulnar styloid landmarks, and place the tape at one-third the distance.
99	**SCYE DEPTH LENGTH** 	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.
100	**SHOULDER LENGTH** 	Distance from the side neck point to the shoulder point (acromion). Subject sits or stands erect with shoulders relaxed.

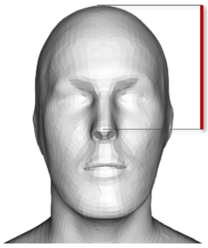
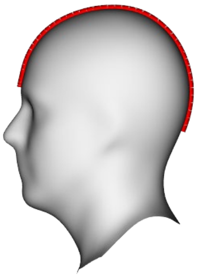
ID	Measurement	Description
101	**SHOULDER SLOPE** 	The value, in degrees, of the angle of inclination measured with the inclinometer placed on the shoulder following a line joining the shoulder and side neck point. Subject stands erect with the arms hanging freely downward.
102	**SHOULDER-ELBOW HEIGHT** 	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.
103	**UNDERARM LENGTH (SLEEVE INSEAM)** 	Distance between the armpit front fold point and palm side of the wrist at a level of the wrist point. Subject sands erect with the arm abducted to form a 20º angle with the side of the body with the palm facing the body.

A2. HEAD MEASUREMENTS

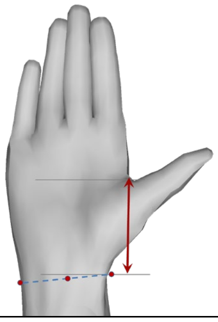
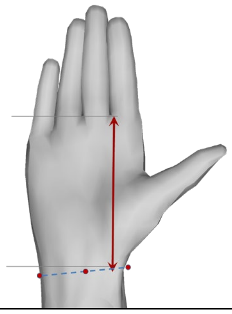
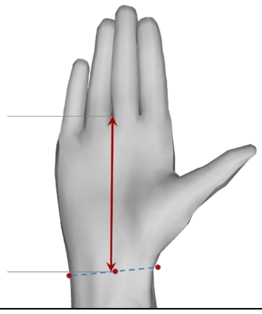
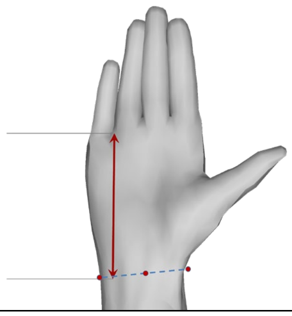
ID	Measurement	Description
1	**BITRAGION ARC** 	Arc from one tragion over the crown of the head to the other tragion perpendicular to the Frankfurt and sagittal arc. Tape measure is held on the tragion of one side of the head and led over the crown to the tragion on the other side. Hair shall be included in the measurement.
2	**BITRAGION BREADTH** 	Bitragion breadth / Ear to ear breadth. Measured horizontally between the tragia (just above the small projection of cartilage, or tragus, which is found just in front of the external opening of the ear).
3	**EYE TO CERVICAL HEIGHT** 	Eye height minus neck height.
4	**EYE TO OCCIPITAL DEPTH** 	Measured horizontally from the outer border of the eye socket to the most protruding part of the back of the head (occiput).

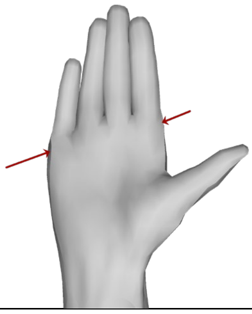
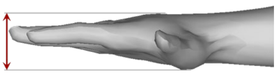
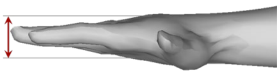
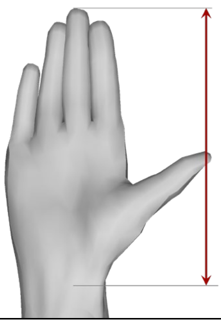
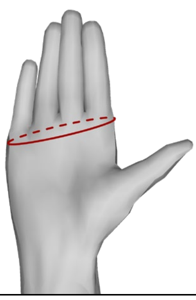
ID	Measurement	Description
5	**EYE TO VERTEX HEIGHT** 	Measured vertically from the outer border of the eye socket to the top of the head.
6	**HEAD BREADTH** 	Maximum breadth of head above the level of the ears, measured perpendicular to the midsagittal plane. Position of head has no influence on the measurement.
7	**HEAD GIRTH** 	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.
8	**HEAD LENGTH** 	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 (opisthocranion). Position of head has no influence on the measurement.

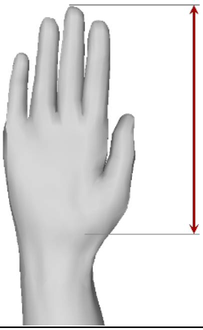
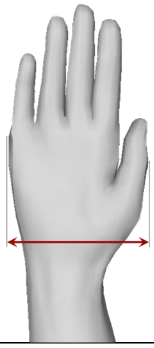
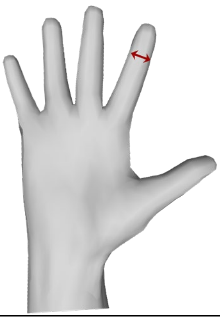
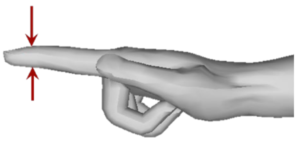
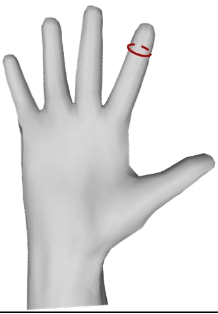
ID	Measurement	Description
9	**VERTICAL HEAD GIRTH** 	Head circumference measured with a tape measure from the crown of the head, passing in front of the ears and along the back of the jaw, to meet below the jaw at the point where it joins the throat.
10	**LIP LENGTH** 	The straight-line distance between the right and left chelion landmarks at the corners of the closed mouth is measured with a sliding calliper. The subject sits looking straight ahead with teeth together (lightly occluded). The facial muscles are relaxed, and the mouth is closed.
11	**MIDDLE LIP TO VERTEX** 	Measured vertically from the midpoint of the line formed when the lips are closed, to the top of the head.
12	**MENTON TO SELLION LENGTH** 	Distance between sellion and menton. Subject keeps mouth closed. Head is oriented in the Frankfurt plane.
13	**NOSETIP TO OCCIPITAL** 	Measured horizontally from the tip of the nose to the most protruding part of the back of the head (the occiput).

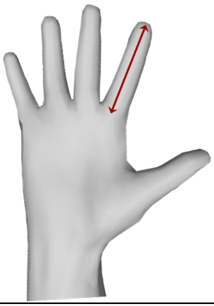
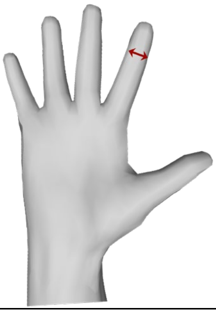
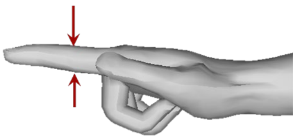
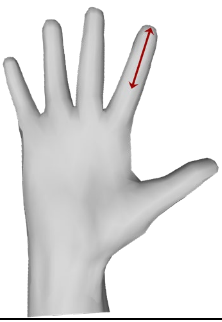
ID	Measurement	Description
14	**NOSETIP TO TOP OF HEAD** 	Measured vertically from the tip of the nose to the top of the head.
15	**SAGITTAL ARC** 	Arc from the glabella over the skull to the nuchale. Tape measure is held on the glabella and led over the head so as to pass over the rearmost point of the skull to the nuchale. Hair shall be compressed.

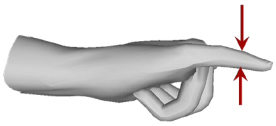
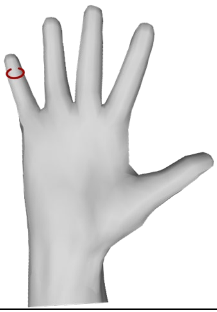
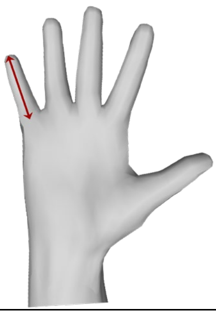
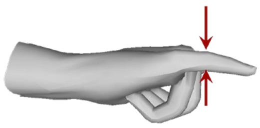
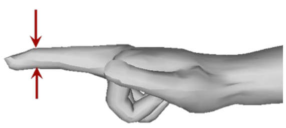
A3. HAND MEASUREMENTS

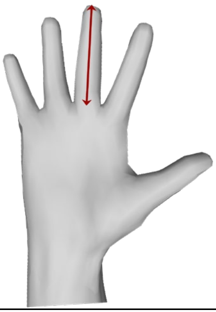
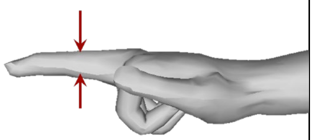
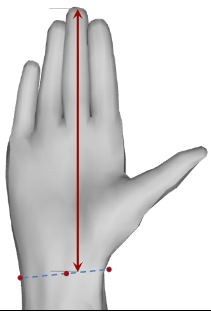
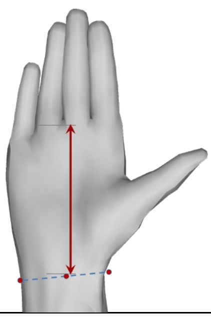
ID	Measurement	Description
1	**CROTCH 1 TO WRIST CREASE** 	Measured from the baseline (wrist crease) to the nearest point on the skinfold in the crotch between thumb and index finger. Hand and fingers are held straight, and the thumb held away from the palm (abducted).
2	**CROTCH 2 TO WRIST CREASE** 	Measured from the baseline (wrist crease) to the nearest point on the skinfold in the crotch between index and middle finger. Hand and fingers are held straight, and the thumb held away from the palm (abducted).
3	**CROTCH 3 TO WRIST CREASE** 	Measured from the baseline (wrist crease) to the nearest point on the skinfold in the crotch between middle and fourth (ring) finger. Hand and fingers are held straight, and the thumb held away from the palm (abducted).
4	**CROTCH 4 TO WRIST CREASE** 	Measured from the baseline (wrist crease) to the nearest point on the skinfold in the crotch between fourth (ring) and little finger. Hand and fingers are held straight, and the thumb held away from the palm (abducted).

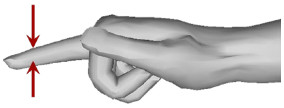
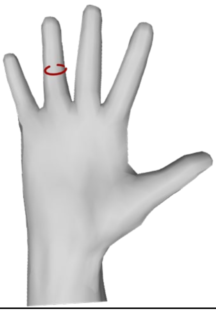
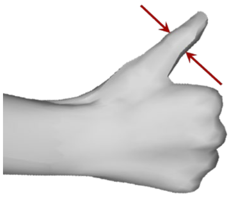
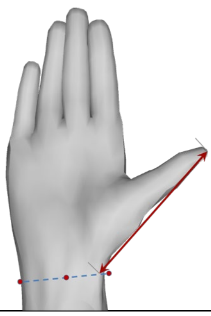
ID	Measurement	Description
5	**HAND BREADTH AT METACARPALS** 	Projected distance between radial and ulnar metacarpals at the level of the metacarpal heads from the second to the fifth metacarpal, measured perpendicular to the long axis of the middle finger. Subject holds forearm horizontal with hand stretched out flat, palm up.
6	**HAND DEPTH (AT THUMB)** 	Measured from the pad of muscle at the base of the thumb to the back of the hand. Hand and fingers straight, with the thumb aligned along the side of the palm. This is a maximum measure of flat hand thickness.
7	**HAND DEPTH (MIDDLE FINGER KNUCKLE)** 	Maximum thickness of the hand, measured across the knuckles. Subject holds the hand flat, palm down, with the fingers together. The measurement captures the thickest part of the hand.
8	**HAND LENGTH (STYLION)** 	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.
9	**HAND AT METACARPALS GIRTH** 	Maximum girth over the knuckles (metacarpals). Subject holds forearm horizontal with hand outstretched, fingers extended, and thumb abducted. Hand circumference, around finger knuckles

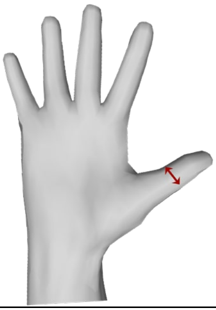
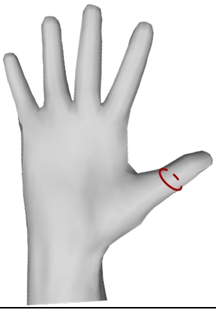
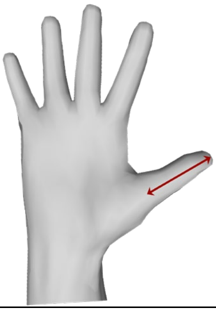
ID	Measurement	Description
10	**HAND LENGTH TO THUMB BASE** 	Measure from middle finger tip to the base of the thumb. Posture with elbow in 90º, palm open, 4 fingers together and thumb up.
11	**HAND BREADTH, INCLUDING THUMB** 	The maximum distance across the hand and thumb at the level of the middle joint of the thumb. The subject extends the hand and the thumb is held against the side of the palm.
12	**INDEX FINGER DISTAL JOINT BREADTH** 	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.
13	**INDEX FINGER DISTAL JOINT DEPTH** 	Measured across the joint toward the tip of the index finger (second digit), from the palm side to the opposite side. Finger straight.
14	**INDEX FINGER DISTAL JOINT GIRTH** 	Measured around the joint toward the tip of the index finger (second digit). Finger straight.

ID	Measurement	Description
15	**INDEX FINGER LENGTH** 	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.
16	**INDEX FINGER PROXIMAL JOINT BREADTH** 	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.
17	**INDEX FINGER PROXIMAL JOINT DEPTH** 	Measured across the joint of the index finger (second digit) nearest the palm, from the palm side to the opposite side. Finger straight
18	**INDEX FINGER PROXIMAL JOINT GIRTH** 	Measured around the joint of the index finger (second digit) nearest the palm. Finger straight.
19	**INDEX FINGERTIP TO PROXIMAL JOINT** 	Measured from the tip of the index finger to the proximal joint. The fingers are held straight

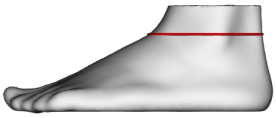
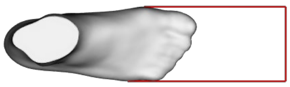
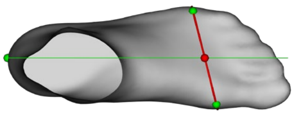
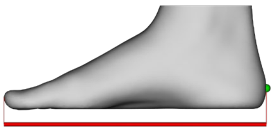
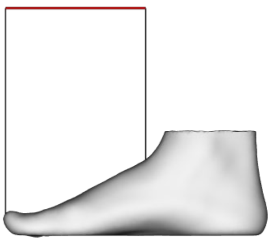
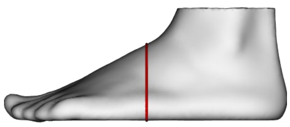
ID	Measurement	Description
20	**LITTLE FINGER DISTAL JOINT DEPTH** 	Measured across the joint toward the tip of the little finger (fifth digit), from the palm side to the opposite side. Finger straight.
21	**LITTLE FINGER DISTAL JOINT GIRTH** 	Measured around the joint toward the tip of the little finger (fifth digit). Finger straight.
22	**LITTLE FINGER LENGTH** 	Measured from the tip of the little finger (fifth digit) to the base of the finger at the level of the skin web between it and the ring finger. Finger held straight.
23	**LITTLE FINGER PROXIMAL JOINT DEPTH** 	Measured across the joint of the little finger (fifth digit) nearest the palm, from the palm side to the opposite side. Finger straight
24	**LITTLE FINGER PROXIMAL JOINT GIRTH** 	Measured around the joint of the little finger (fifth digit) nearest the palm. finger straight
25	**MIDDLE FINGER DISTAL JOINT DEPTH** 	Measured across the joint toward the tip of the middle finger (third digit), from the palm side to the opposite side. Finger straight.

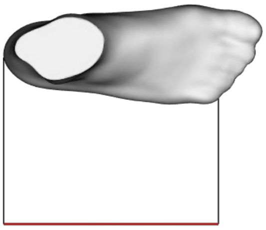
ID	Measurement	Description
26	**MIDDLE FINGER LENGTH** 	Measured from the tip of the middle finger (third digit) to the skin crease at the base of the finger, parallel to its long axis. The hand and fingers should be held straight and flat, palm uppermost.
27	**MIDDLE FINGER PROXIMAL JOINT DEPTH** 	Measured across the joint of the middle finger (third digit) nearest the palm, from the palm side to the opposite side. Finger straight.
28	**MIDDLE FINGER PROXIMAL JOINT GIRTH** 	Measured around the joint of the middle finger (third digit) nearest the palm. Finger straight.
29	**MIDDLE FINGERTIP TO WRIST CREASE LENGTH** 	Measured from the tip of the middle finger (third digit) to a line through the wrist crease. The fingers are held straight but loosely separated. The height is perpendicular to the wrist crease and is not the same as palm length plus the finger length.
30	**PALM LENGTH** 	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.

ID	Measurement	Description
31	**RING FINGER DISTAL JOINT DEPTH** 	Measured across the joint toward the tip of the ring finger (fourth digit), from the palm side to the opposite side. Finger straight.
32	**RING FINGER PROXIMAL JOINT DEPTH** 	Measured across the joint of the ring finger (fourth digit) nearest the palm, from the palm side to the opposite side. Finger straight
33	**RING FINGER PROXIMAL JOINT GIRTH** 	Measured around the joint of the ring finger (fourth digit) nearest the palm, Finger straight
34	**THUMB FINGER DISTAL JOINT DEPTH** 	Measured across the thumb joint from the palm side to the opposite side. Thumb (fist digit) held straight
35	**THUMB FINGERTIP TO WRIST CREASE LENGTH** 	Measured from the tip of the thumb (first digit) to a line through the wrist crease. The fingers and thumb are held straight but loosely separated. The height is perpendicular to the wrist crease and is not the same as palm length plus thumb length.

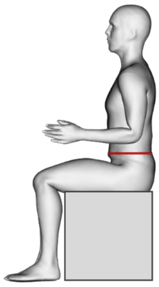
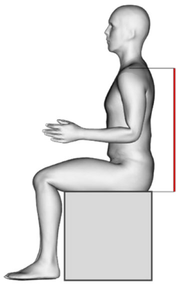
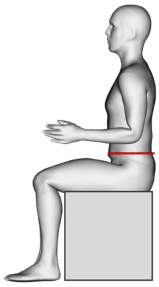
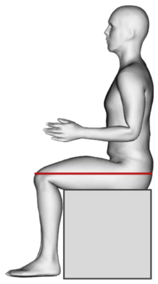
ID	Measurement	Description
36	**THUMB JOINT BREADTH** 	Maximum breadth of the thumb in the region of the joint between the two phalanges. Subject holds the forearm horizontal with the hand stretched out flat, the thumb abducted and outstretched and fingers spread, palm up, with the thumb abducted and outstretched.
37	**THUMB JOINT GIRTH** 	Measured around the joint of the thumb (fist digit). thumb held straight
38	**THUMB LENGTH** 	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.

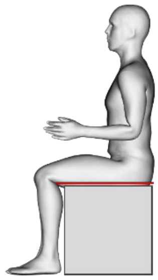
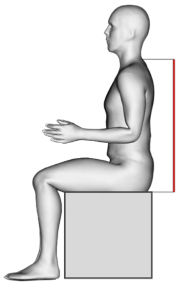
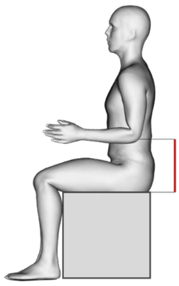
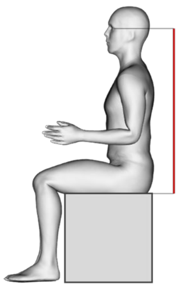
A4. FOOT MEASUREMENTS

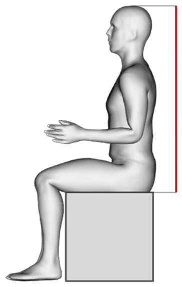
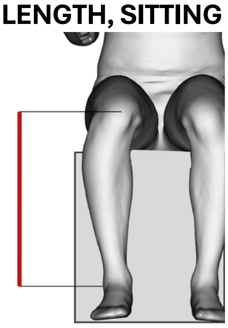
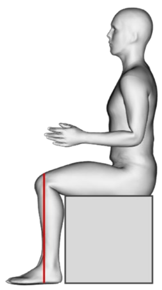
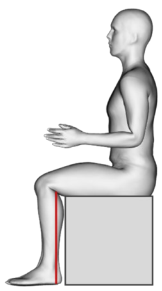
ID	Measurement	Description
1	**ANKLE GIRTH (OUTER)** 	Horizontal girth of the leg measured at the level of the outer ankle point. Subject stands erect with legs shoulder width apart.
2	**ANKLE HEIGHT, OUTER** 	Vertical distance from the outer point (malleolus) of the ankle to the ground. The person is standing with feet together.
3	**FOOT BREADTH** 	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.
4	**FOOT GIRTH** 	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.
5	**FOOT LENGTH** 	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.
6	**FOREFOOT LENGTH** 	Measured horizontally from the tip of the longest toe to the point where the shin meets the top of the foot. The person stands with their feet slightly apart and weight evenly distributed.
7	**INSTEP HEIGHT** 	Measured vertically from the floor to the highest point on the top of the foot, just before the foot meets the front of the leg.

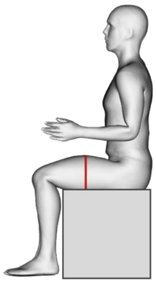
ID	Measurement	Description
8	**Little tiptoe to pternion length** 	Measured horizontally from the tip of the little toe to the back of the heel.

A5. MEASUREMENTS IN SITTING POSTURE

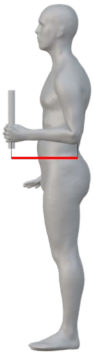
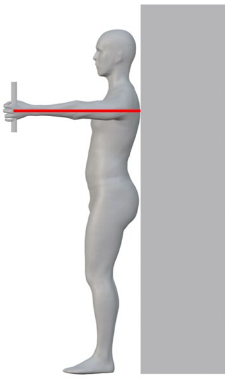
ID	Measurement	Description
1	**ABDOMEN DEPTH, SITTING** 	Maximum depth of the abdomen whilst sitting. Subject sits fully erect, with the feet supported so that the femora are horizonal and parallel to each other and with the muscles of the abdomen relaxed.
2	**ACROMION HEIGHT, SITTING** 	Vertical distance 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.
3	**BUTTOCK-ABDOMEN DEPTH, SITTING** 	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.
4	**BUTTOCK - KNEE LENGTH, SITTING** 	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.

ID	Measurement	Description
5	**BUTTOCK - POPLITEAL LENGTH (SEAT DEPTH), SITTING** 	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.
6	**CERVICALE HEIGHT, SITTING** 	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.
7	**ELBOW HEIGHT, SITTING** 	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.
8	**EYE HEIGHT, SITTING** 	Vertical distance from a horizontal sitting surface to the outer corner or 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.

ID	Measurement	Description
9	**SITTING HEIGHT** 	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.
10	**HIP BREADTH, SITTING** 	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.
11	**KNEE TO ANKLE LENGTH, SITTING** 	Distance from the knee joint to the ankle (tibial length).
12	**TOP OF KNEE HEIGHT, SITTING** 	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.
13	**POPLITEAL HEIGHT, SITTING** 	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.

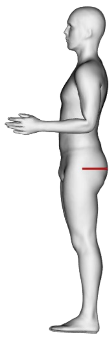
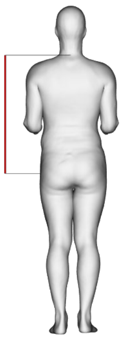
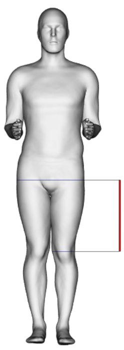
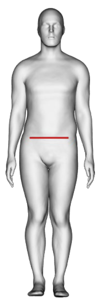
ID	Measurement	Description
14	**THIGH HEIGHT, SITTING** 	Vertical distance from the sitting surface to the highest point on the thigh. Subject sits erect with knees bent at right angles, supporting the feet flat on the floor.

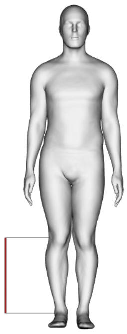
A6. SPECIAL POSTURES MEASUREMENTS

ID	Measurement	Description
1	**ELBOW TO GRIP LENGTH** 	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.
2	**FORWARD GRIP REACH, STANDING OR SITTING** 	Horizontal distance from a vertical surface to the grip axis of the hand while the subject leans both shoulder blades against the vertical surface. Measured horizontally from the vertical seat back or wall to the center of a rod gripped vertically in the hand. The person stands or sits erect, the arm stretched horizontally in front of them.
3	**WALL TO ACROMION LENGTH** 	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.

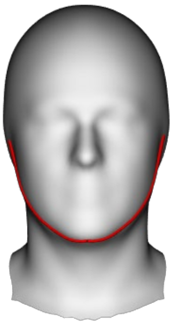
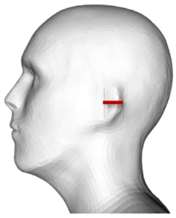
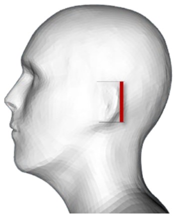
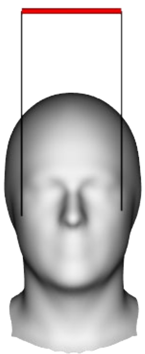
X.3.2 Plan B – ANTHROPOMETRY

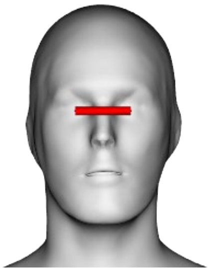
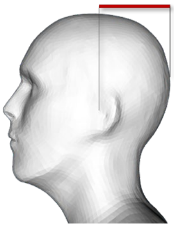
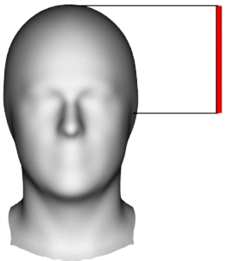
B1. BODY MEASUREMENTS

ID	Measurement	Description
1	**HIP TO BUTTOCK DEPTH** 	Horizontal distance from the hip joint (trochanter) to the posterior part of the buttock.
2	**CERVICAL TO HIP JOINT LENGHT** 	Vertical distance from the neck (cervicale) to the hip joint (trochanter).
3	**HIP TO KNEE LENGTH** 	Distance between the joints of the hip (trochanter) and the knee (outer lateral epicondyle).
4	**ILIAC CRESTS BREADTH** 	Horizontal distance from one iliac crest to the other.

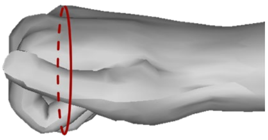
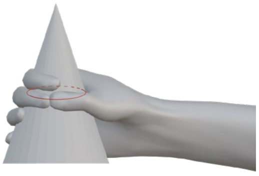
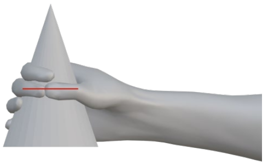
ID	Measurement	Description
5	**POPLITEAL TO ANKLE HEIGHT** 	Measured vertically from the outer border of the crease at the back of the knee to the tip of outer ankle bone (lateral malleolus). The person stands with the feet together.
6	**TRUNK LENGTH** 	Vertical distance from the shoulder (acromion) to the hip articulation (trochanter).

B2. HEAD MEASUREMENTS

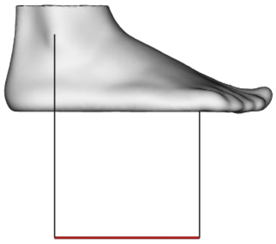
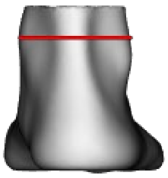
ID	Measurement	Description
1	**BITRAGION CHIN ARC** 	The surface distance between the right and left tragion landmarks across the anterior point of the chin is measured with a tape. The subject sits looking straight ahead and with teeth together (lightly occluded). Enough tension is exerted to maintain light contact between the tape and the skin. The chin will be slightly compressed.
2	**EAR BREADTH** 	Measured across the ear from just above the small projection of cartilage (tragus), found in front of the external opening of the ear, to the rearmost point.
3	**EAR LENGTH** 	Measured from the upper border of the ear to the lower border of the lobe of the ear. The measurement is maximal.
4	**FACE BREADTH** 	Maximum horizontal breadth of the face as measured with a spreading caliper between the zygomatic arches. The subject sits looking straight ahead and with teeth together (lightly occluded). Only enough pressure is exerted to ensure that the caliper tips are on the zygomatic arches.

ID	Measurement	Description
5	**INTERPUPILLARY DISTANCE** 	Distance between the centers of the pupils when the eyes are fixating an object at an infinite distance in the straight-ahead position. The interpupillary distance is expressed in millimeters.
6	**TRAGION TO OCCIPITAL DEPTH** 	Measured horizontally from just above the small projection of cartilage (tragus), found just in front of the external opening of the ear, to the most protruding part of the back of the head (the occiput).
7	**TRAGION TO VERTEX** 	Measured vertically from the tragion (just above the small projection of cartilage, or tragus, which is found just in front of the external opening of the ear) to the top of the head.
8	**BITRAGION SUBMANDIBULAR ARC**	Needs extra info for definition from CEN/TC 159 WG 6
9	**EAR LENGTH ABOVE TRAGION**	Needs extra info for definition from CEN/TC 159 WG 6
10	**EAR PROTRUSION**	Needs extra info for definition from CEN/TC 159 WG 6

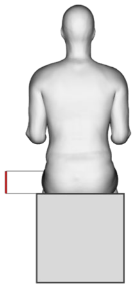
B3. HAND MEASUREMENTS

ID	Measurement	Description
1	**FIST CIRCUMFERENCE** 	The person makes a fist, with the fingers closed into the palm of the hand. The measurements are made around the knuckles at the base of the fingers and the thumb.
2	**GRIP CIRCUMFERENCE** 	Measured by grasping a cone at the largest circumference permitting the tips of the thumb and middle finger to touch. The circumference is recorded.
3	**MIDDLE FINGER GRIP DIAMETER** 	Measured by grasping a cone at the largest circumference permitting the tips of the thumb and middle finger to touch. The diameter is recorded.

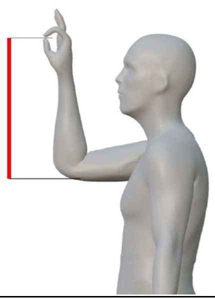
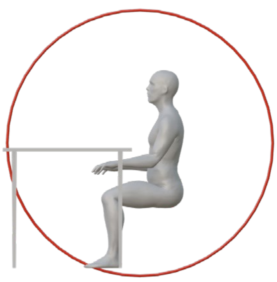
B4. FOOT MEASUREMENTS

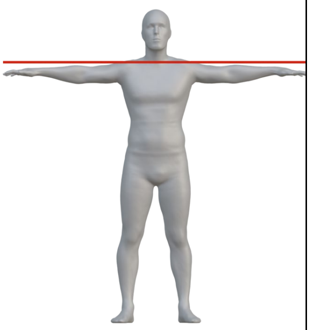
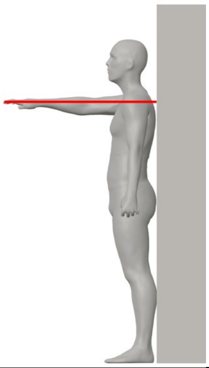
ID	Measurement	Description
1	**ANKLE TO FOOT PEDAL POINT** 	Horizontal distance from the ankle to the point of the foot where is applied to the pedal.
2	**ANKLE BREADTH** 	Measured horizontally from the most protruding part of the inner (medial) ankle bone (malleolus) to the most protruding part of the outer (lateral) ankle bone. The plane between these two points is oblique but a horizontal distance is measured.

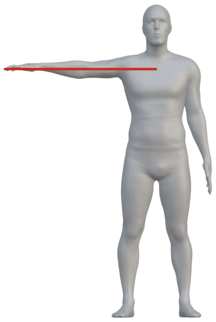
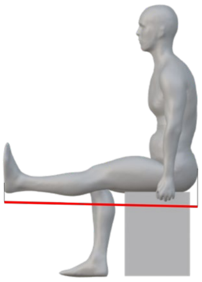
B5. MEASUREMENTS IN SITTING POSTURE

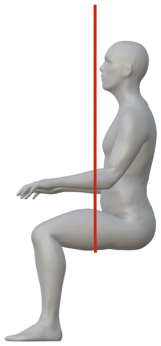
ID	Measurement	Description
1	**HIP HEIGHT, SITTING** 	Vertical distance from the surface of the seat to the hip joint (trochanteric)

B6. MEASUREMENTS IN SPECIAL POSTURES

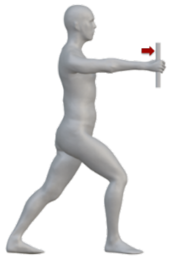
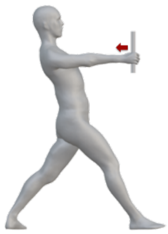
ID	Measurement	Description
1	**SHOULDER (ACROMION) TO GRIP** 	Measured from the bony tip of the shoulder (acromion) to the tip of the center of a rod gripped vertically in the hand. The arm should be straight.
2	**ELBOW GIRTH, ARM BENT** 	Girth of the elbow at the elbow point. Subject stands erect with the elbow bent at a 90Â° angle and the hand and fingers extended.
3	**ELBOW TO PINCH LENGTH** 	Measured from the back of the elbow (olecranon) to the middle of the pad of the thumb where contact is made in a pinch-grip. The person sits or stands, with the upper arm vertical and the elbow flexed to 90 degrees.
4	**EVOLVING SPACE OF A PERSON IN A CAB OR WORKSTATION** 	A dynamic spatial envelope representing the temporal variation in a person's ergonomic, functional, and interactive spatial requirements within a cab or workstation, influenced by posture shifts, task-specific motions, and equipment interaction.

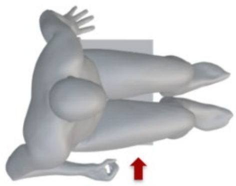
ID	Measurement	Description
5	**SPAN** 	Measured horizontally from the tip of the middle finger on one hand to the middle finger on the other. The person stands erect, feet together and the arms outstretched on either side in line with the shoulders.
6	**FORWARD ARMPIT TO FINGERTIP REACH** 	Measured horizontally from the armpit to the tip of the middle finger. The person stands or sits erect, the arm and hand stretched horizontally in front of them.
7	**FORWARD ARMPIT TO KNUCKLE REACH** 	Measured horizontally from the armpit the proximal finger crease on the palm of the hand. The person stands or sits erect, the arm and hand stretched horizontally in front of them.
8	**FORWARD FINGERTIP REACH, STANDING OR SITTING** 	Measured horizontally from the vertical seat back or wall to the tip of the middle finger. The person stands or sits erect, the arm and hand stretched horizontally in front of them.

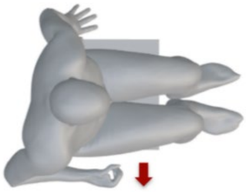
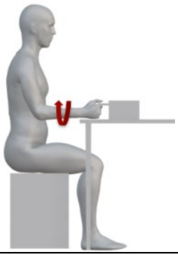
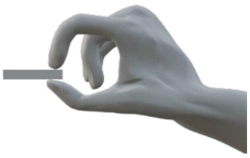
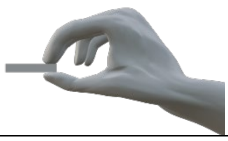
ID	Measurement	Description
9	**LATERAL ARM REACH** 	Similar to forward to fingertips.
10	**OVERHEAD FINGERTIP REACH** 	Measured vertically from the floor to the tip of the middle finger. The person stands erect, weight evenly balanced, with the arm extended vertically above the head and the hand and fingers held straight.
11	**SEMI-SUPINE LENGTH** 	Measured horizontally in semi supine position, referring to the positions where the patient is lying on the surgical table but with additional articulations.
12	**BUTTOCK TO SOLE OF FOOT** 	Measured horizontally from the most posterior part of the buttock to the sole of the foot. The person sits erect with one leg extended horizontally in front of them.

ID	Measurement	Description
13	**HEIGHT SITTING IN WORK CHAIR** 	Vertical space to move forward and backward while seated in a work chair.

X.3.3 STRENGTHS

ID	Measurement	Description
1	PEDAL WORK SITTING (WITH TRUNK SUPPORT), ANKLE 	The maximum force applied by the right-left foot on the load cell while keeping the heel as the fulcrum and the person sits straight on a chair with his knee flexed at an angle 90 to 110. In a pedal (load cell), pushing with the foot, with the heel supported over the ground (like driving).
2	PEDAL WORK SITTING (WITH TRUNK SUPPORT), LEG 	The maximum force applied by the right-left leg on the load cell while the person sits erect on a chair with his knee joint flexed at an angle between 90° and 110°. With the foot over a pedal (load cell), pushing with the leg, heel separated from the ground.
3	PUSH STRENGTH (BOTH HANDS), STANDING 	The maximum pull force applied with both hands on the load cell in a standing position with one leg backward
4	PULL STRENGTH (BOTH HANDS), STANDING 	The maximum pull force applied with both hands on the load cell in a standing position with one leg backward
5	PUSH: ARM WORK (SITTING POSTURE, ONE ARM) 	Pushing forward (N) on a vertical handgrip at optimal position without trunk support as described in standard.

ID	Measurement	Description
6	PULL: ARM WORK (SITTING POSTURE, ONE ARM) 	Pull (N) on a vertical handgrip at optimal position without trunk support as described in standard.
7	DOWN (PUSHING DOWN): ARM WORK (SITTING POSTURE, ONE ARM) 	Pushing down (N) on a vertical handgrip at optimal position as described in standard.
8	UP (PUSHING UP): ARM WORK (SITTING POSTURE, ONE ARM) 	Pushing up (N) on a vertical handgrip at optimal position as described in standard.
9	IN (INWARD): ARM WORK (SITTING POSTURE, ONE ARM) 	Pushing (N) on a vertical handgrip to the middle of the body at optimal position as described in standard.

ID	Measurement	Description
10	OUT (OUTWARD): ARM WORK (SITTING POSTURE, ONE ARM) 	Pushing (N) on a vertical handgrip to the side of the body at optimal position as described in standard.
11	WRIST WISTING STRENGTH 	Torque (Nm) exerted with lateral grip using 1 hand on knob (T-shaped handled or the 3-sided knob) free posture, elbow flexed approx. 90º.
12	POWER GRIP 	The grip strength of the right-left hand measured with a handgrip dynamometer when the person stands erect with his arms hanging downwards.
13	PINCH STRENGTH, TIPS OF FINGERS 	Pinch strength (Newtons) between the tip of the thumb and index finger (dominant hand). The fabric strig was pinched with the pads of the thumb and the index finger. The distal interphalangeal joints either in flexed or hyperextended position.
14	PINCH STRENGTH, PADS OF THUMB AND TWO FINGERS 	Pinch strength (N) between the pads of the index and middle fingers and thumb (dominant hand). Do the measurement in the three pinch orientations (x, y, z).

X.3.4 SKIN FOLD THICKNESS

The skin fold thickness is measured using standardised callipers.

The following individual skinfold measurements are to be measured:

1. biceps (front, centre of the upper arm)
2. triceps (back, centre of the upper arm)
3. subscapularis (top of the back, directly below the shoulder blade)
4. suprailiac (front of the hip, above the pelvic bone)

X.4 Information on measurement instruments

Measurement Instruments

Instrument	Reference	Specifications
Body Scanner	Full-body scanning system	Accuracy ≤ 1 mm Scanning volume suitable for extreme percentiles Dynamic posture capture Fast acquisition (<10 s)
Head Scanner	Dedicated head scanner	Accuracy ≤ 1 mm Optimized for cranial geometry Fast acquisition and processing
Foot & Hand Scanner	Hand and feet scanner	Accuracy ≤ 1 mm Could be used for both feet and hands High-resolution geometry capture Scanning volume suitable for feet extreme percentiles

Instrument / Setup	Measurements covered	Recommended specification
1. Pedal force module / load-cell pedal	Pedal work sitting, ankle Pedal work sitting, leg	F least count: 1 N System accuracy: <1% Capacity ≥ 2,000 N, ideally ≥ 2,500 N
2. Standing push/pull force module	Push strength, both hands, standing Pull strength, both hands, standing	F least count: 1 N System accuracy: <1% Capacity ≥ 2,000 N, ideally ≥ 2,500 N
3. Seated horizontal push/pull force module	Push, arm work, sitting, one arm Pull, arm work, sitting, one arm	F least count: 1 N System accuracy: <1% Capacity ≥ 500 N, ideally ≥ 1,000 N
4. Seated vertical and medio-lateral force module	Down, arm work, sitting, one arm Up, arm work, sitting, one arm Inward, arm work, sitting, one arm Outward, arm work, sitting, one arm	F least count: 1 N System accuracy: <1% Capacity ≥ 500 N per force axis Ideally, capacity ≥ 1,000 N per axis to cover extreme adult users
5. Wrist torque module / twisting dynamometer	Wrist twisting strength	Torque least count: 0.1 Nm. System accuracy: >1%. Capacity ≥ 20 Nm if possible ≥ 10–12 Nm acceptable for general adults
6. Grip force module	Power grip	F least count: 1 N System accuracy: <1% Capacity ≥ 900 N
7. Pinch force module	Pinch strength, tips/pads of thumb and index finger Pinch strength, pads of thumb and two fingers	F least count: 1 N System accuracy: <1% Capacity ≥ 250 N