

Claims

1. Computer-implemented method for creating a functional form (50), in particular as a basis for individually fitting an orthosis or prosthesis to a first patient, comprising the following steps:
 - a) receiving of anatomic structural data (ASD) of the first patient;
 - b) applying a transfer algorithm (30) to generate functional form data (FFD) for the first patient;whereby the received functional form data (FFD) forms the basis on which an individualized orthosis or prosthesis is manufactured.
2. Method according to claim 1, characterized in that step b) comprises encoding the anatomic structural data (ASD), preferably by means of a first statistical shape model (20).
3. Method according to claim 2, characterized in that the first statistical shape model (20) encodes the anatomic structural data (ASD) in form of deviations of the anatomic structural data (ASD) of the first patient from anatomic structural data of a limited amount of various patients as comprised by the first statistical shape model (20).
4. Method according to one of the preceding claims, characterized in that step b) further comprises decoding structural data (SD) as provided by the transfer algorithm (30) to receive functional form data (FFD), preferably by means of a second statistical shape model (40).
5. Method according to claim 4, characterized in that the second statistical shape model (40) decodes the structural data (SD) of the first patient representing deviations from functional form data of a limited

amount of various patients as comprised by the second statistical shape model (40) to provide functional form data (FFD) for the first patient.

6. Method according to claim 4 or 5,
c h a r a c t e r i z e d i n t h a t
step b) further comprises:
 - applying the transfer algorithm (30), in particular using a neural network, to the anatomic structural data (ASD) of the first patient as comprised by the first statistical shape model (20), in particular to the encoded anatomical structural data (eASD) of the first patient.
7. Method according to claim 6,
c h a r a c t e r i z e d i n t h a t
the transfer algorithm (30) is modified and/or trained on basis of the anatomic structural data (ASD) and functional form data of the various patients as comprised by the first statistical shape model (20) and the second statistical shape model (40) such that the transfer algorithm (30) is capable of generating structural data (SD) of the first patient being provided to the second statistical shape model (40).
8. Method according to one of the preceding claims,
c h a r a c t e r i z e d i n t h a t
the transfer algorithm (30) uses a neural network to generate functional form data (FFD), in particular to generate structural data (SD).
9. Method according to one of the preceding claims,
c h a r a c t e r i z e d i n t h a t
step a) comprises scanning of an extremity of the first patient, in particular of a lower leg of the first patient, to provide the anatomic structural data (ASD) of the first patient.
10. Method according to one of the preceding claims,
c h a r a c t e r i z e d i n t h a t
the method further comprises the following steps:
 - illustrating at least a visualization of a first three-dimensional structure of the anatomic structural data (ASD) of the first patient, and/or
 - illustrating at least a visualization of a second three-dimensional structure of the functional form data (FFD) of the first patient.

11. Method according to claim 10,
c h a r a c t e r i z e d i n t h a t
the visualization of the first three-dimensional structure and the visualization of the second three-dimensional structure are movable relative to each other such that the first and second three-dimensional structures do not overlap each other or at least partially overlap each other.
12. Method according to one of claims 10 or 11,
c h a r a c t e r i z e d i n t h a t
after illustrating the visualization of the first three-dimensional structure and/or of the visualization of the second three-dimensional structure, receiving user input for modifying the visualization of the first three-dimensional structure of the anatomic structural data (ASD) and/or the visualization of the three-dimensional structure of the functional form data (FFD).
13. A data processing system comprising means for carrying out the steps of the method of one of the preceding claims.
14. A data processing system according to claim 13,
c h a r a c t e r i z e d i n t h a t
at least one client and at least one server is provided,
whereby the client is capable of sending the anatomic structural data (ASD) of the first patient to the server and receiving the functional form data (FFD) of the first patient from the server, and
whereby at least one server is capable of:
 - receiving the anatomic structural data (ASD) of the first patient from the client,
 - processing the anatomic structural data (ASD) of the first patient by at least the transfer algorithm (30), preferably by the first statistical shape model (20), the transfer algorithm (30) and the second statistical shape model (40), to generate functional form data (FFD) of the first patient,
 - providing functional form data (FFD) of the first patient to the client.

15. A computer-readable medium comprising instructions which, when executed by a computer, cause the computer to carry out the steps of the method of one of the claims 1 to 12.