CLAIMS

1. A mesh encoding method comprising:

obtaining an encoded static mesh, the encoded static mesh including a plurality of static mesh attributes;

encoding a basemesh based on the encoded static mesh and motion information, the encoded basemesh including lower-level mapping information that associates a lower-level attribute identifier with each static mesh attribute in at least a subset of the static mesh attributes; and

encoding a dynamic mesh based on the encoded basemesh and atlas information, the encoded dynamic mesh including upper-level mapping information that associates each of a plurality of upper-level attributes with a respective one of the lower-level attribute identifiers.

2. The method of claim 1, wherein each of the static mesh attributes is identified by an index.

3. The method of claim 1 or 2, wherein the lower-level attribute identifier is an index.

4. The method of any one of claims 1-3, wherein the lower-level mapping information further identifies an attribute type for each of the static mesh attributes in the subset of the static mesh attributes.

5. The method of any one of claims 1-4, wherein the upper-level mapping information further identifies an attribute type associated with each of the upper-level attributes.

6. A mesh encoder apparatus comprising one or more processors configured to perform at least:

obtaining an encoded static mesh, the encoded static mesh including a plurality of static mesh attributes;

encoding a basemesh based on the encoded static mesh and motion information, the encoded basemesh including lower-level mapping information that associates a lower-level attribute identifier with each static mesh attribute in at least a subset of the static mesh attributes; and

encoding a dynamic mesh based on the encoded basemesh and atlas information, the encoded dynamic mesh including upper-level mapping information that associates each of a plurality of upper-level attributes with a respective one of the lower-level attribute identifiers.

7. The apparatus of claim 6, wherein each of the static mesh attributes is identified by an index.

8. The apparatus of claim 6 or 7, wherein the lower-level attribute identifier is an index.

9. The apparatus of any one of claims 6-8, wherein the lower-level mapping information further identifies an attribute type for each of the static mesh attributes in the subset of the static mesh attributes.

10. The apparatus of any one of claims 6-9, wherein the upper-level mapping information further identifies an attribute type associated with each of the upper-level attributes.

11. A mesh decoding method comprising:

obtaining an encoded dynamic mesh, the encoded dynamic mesh including an encoded basemesh, atlas information, and upper-level mapping information that associates a respective lower-level attribute identifiers with each of a plurality of upper-level attributes;

decoding the encoded basemesh, the encoded basemesh including an encoded static mesh, motion information, and lower-level mapping information, wherein the static mesh includes a plurality of static mesh attributes, and wherein the lower-level mapping information associates a lower-level attribute identifier with each of a plurality of the static mesh attributes; and

decoding the encoded static mesh, including decoding at least a first static mesh attribute, wherein the first static mesh attribute maps to at least one of the upper-level attributes through the lower-level mapping information and the upper-level mapping information.

12. The method of claim 11, further comprising determining for at least a second static mesh attribute whether the second static mesh attribute maps to any upper-level attribute, and wherein the second static mesh attribute is not decoded in response to a determination that the second static mesh attribute does not map to any upper-level attribute.

13. The method of claim 11 or 12, wherein each of the static mesh attributes is identified by an index.

14. The method of any one of claims 11-13, wherein the lower-level attribute identifier is an index.

15. The method of any one of claims 11-14, wherein the lower-level mapping information further identifies an attribute type for each of the static mesh attributes in the subset of the static mesh attributes.

16. The method of any one of claims 11-15, wherein the upper-level mapping information further identifies an attribute type associated with each of the upper-level attributes.

17. The method of any one of claims 11-16, wherein the static mesh has a plurality of faces, and wherein at least one of the static mesh attributes is an attribute of each of the faces.

18. The method of any one of claims 11-17, wherein the static mesh has a plurality of vertices, and wherein at least one of the static mesh attributes is an attribute of each of the vertices.

19. A mesh decoder apparatus comprising one or more processors configured to perform at least:

obtaining an encoded dynamic mesh, the encoded dynamic mesh including an encoded basemesh, atlas information, and upper-level mapping information that associates a respective lower-level attribute identifiers with each of a plurality of upper-level attributes;

decoding the encoded basemesh, the encoded basemesh including an encoded static mesh, motion information, and lower-level mapping information, wherein the static mesh includes a plurality of static mesh attributes, and wherein the lower-level mapping information associates a lower-level attribute identifier with each of a plurality of the static mesh attributes; and

decoding the encoded static mesh, including decoding at least a first static mesh attribute, wherein the first static mesh attribute maps to at least one of the upper-level attributes through the lower-level mapping information and the upper-level mapping information.

20. The apparatus of claim 19, further comprising determining for at least a second static mesh attribute whether the second static mesh attribute maps to any upper-level attribute, and wherein the second static mesh attribute is not decoded in response to a determination that the second static mesh attribute does not map to any upper-level attribute.

21. The apparatus of claim 19 or 20, wherein each of the static mesh attributes is identified by an index.

22. The apparatus of any one of claims 19-21, wherein the lower-level attribute identifier is an index.

23. The apparatus of any one of claims 19-22, wherein the lower-level mapping information further identifies an attribute type for each of the static mesh attributes in the subset of the static mesh attributes.

24. The apparatus of any one of claims 19-23, wherein the upper-level mapping information further identifies an attribute type associated with each of the upper-level attributes.

25. The apparatus of any one of claims 19-24, wherein the static mesh has a plurality of faces, and wherein at least one of the static mesh attributes is an attribute of each of the faces.

26. The apparatus of any one of claims 19-25, wherein the static mesh has a plurality of vertices, and wherein at least one of the static mesh attributes is an attribute of each of the vertices.