CLAIMS

1. A multi-sectional robot, comprising:

a first robot configured to communicate via a first protocol;

a second robot coupled to the first robot and configured to communicate via a second protocol that is different than the first protocol; and

a controller comprising a processing system and a memory, the memory storing a library of operational profiles and encoded with instructions configured to be executed by the processing system to cause the controller to:

operate based on a third protocol that is different from the first protocol and the second protocol;

receive one or more movement commands to move the multi-sectional robot;

determine a status of the multi-sectional robot;

determine an operational profile for the first robot and the second robot by identifying the operational profile in the stored library of operational profiles based on the one or more movement commands and the status, wherein the operational profile comprises one or more robotic control operations;

translate at least a first portion of the operational profile from the third protocol to a first translation in the first protocol;

translate at least a second portion of the operational profile from the third protocol to a second translation in the second protocol; and

transmit the first translation to the first robot as first operational instructions in the first protocol to cause the first robot to perform one or more first movements associated with the one or more movement commands; and

transmit the second translation to the second robot as second operational instructions in the second protocol to cause the second robot to perform one or more second movements associated with the one or more movement commands.

2. The multi-sectional robot of claim 1, wherein the instructions are configured to be executed by the processing system to cause the controller to determine the operational profile by

accessing data correlated to the one or more movement commands and the status within the library of operational profiles.

3. The multi-sectional robot of claim 2, wherein the library of operational profiles comprises a set of rules defining robotic control operations for the first robot and the second robot that are used together in the operational profile based on the status.

4. The multi-sectional robot of claim 1, wherein the instructions are configured to be executed by the processing system to cause the controller to determine the operational profile by performing a coordination control algorithm based on the one or more movement commands and the status.

5. The multi-sectional robot of claim 1, wherein the instructions are configured to be executed by the processing system to cause the controller to:

filter the one or more movement commands based on the status to identify one or more filtered movement commands; and

determine the operational profile by accessing data correlated to the one or more filtered movement commands.

6. The multi-sectional robot of claim 1, wherein the first robot is configured to perform first mechanical actuations based on the first operational instructions and the second robot is configured to perform second mechanical actuations based on the second operational instructions.

7. The multi-sectional robot of claim 1, wherein the instructions are configured to be executed by the processing system to cause the controller to output the first translation to the first robot and output the second translation to the second robot simultaneously.

8. The multi-sectional robot of claim 1, wherein the instructions are configured to be executed by the processing system to cause the controller to output the first translation to the first robot and output the second translation to the second robot according to a sequence.

9. The multi-sectional robot of claim 1, wherein the instructions are configured to be executed by the processing system to cause the controller to translate the one or more movement commands into the third protocol, wherein the one or more movement commands comprise one or more momentary movement commands or a stream of one or more continuous commands.

10. The multi-sectional robot of claim 1, wherein:

the one or more movement commands comprise gross motor robotic instructions for the multi-sectional robot; and

the first operational instructions and the second operational instructions comprise specific actuations.

11. The multi-sectional robot of claim 1, wherein the status of the first robot, the status of the second robot, or both, is defined by one or more sensors of the multi-sectional robot.

12. The multi-sectional robot of claim 1, comprising a machine vision system configured to acquire image data of the first robot, the second robot, or both, wherein the status of the first robot, the second robot or both is defined at least in part by the image data.

13. The multi-sectional robot of claim 1, wherein the first robot and the second robot comprise actuators, audio output devices, and visual output devices configured to be controlled by the first operational instructions and the second operational instructions, respectively.

14. A method for operating a multi-sectional robot, comprising:

storing, at a memory of a first robot, a library of operational profiles;

receiving, via a controller of the first robot, one or more movement commands in a first protocol;

determining, via the controller of the first robot, a status of the multi-sectional robot;

determining, via the controller of the first robot, an operational profile for a second robot and a third robot by identifying the operational profile in the stored library of operational profiles

based on the one or more movement commands and the status, wherein the operational profile comprises one or more robotic control operations;

translating, via the controller of the first robot, at least a first portion of the operational profile from the first protocol to a first translation in a second protocol that is different than the first protocol;

translating, via the controller of the first robot, at least a second portion of the operational profile from the first protocol to a second translation in a third protocol that is different from the first protocol and the second protocol; and

outputting, via the controller of the first robot, the first translation to the second robot as first operational instructions in the first protocol to cause the second robot to perform one or more first movements associated with the one or more movement commands and outputting the second translation to the third robot as second operational instructions in the third protocol to cause the third robot to perform one or more second movements associated with the one or more movement commands.

15. The method of claim 14, comprising:

applying, via the controller of the first robot, one or more mathematical operators to the one or more movement commands to obtain a result; and

determining, via the controller of the first robot, the operational profile for the second robot and the third robot based on the result.

16. The method of claim 14, wherein the controller of the first robot outputs the first translation to the second robot and the second translation to the third robot via a network protocol.

17. A multi-sectional robot, comprising:

a first robot configured to communicate via a first protocol;

a second robot coupled to the first robot and configured to communicate via a second protocol that is different than the first protocol; and

a controller comprising a processing system and memory, the memory storing a library of operational profiles and encoded with instructions configured to be executed by the processing system to cause the controller to:

receive positional data from the first robot in the first protocol;

translate the positional data into translated positional data in a third protocol that is different than the first protocol and the second protocol;

determine an operational profile for the second robot by identifying the operational profile in the stored library of operational profiles based on the translated positional data and a coordination control algorithm, wherein the operational profile includes or is indicative of one or more robotic control operations;

translate at least a portion of the operational profile from the third protocol to a translated operational profile in the second protocol; and

output the translated operational profile to the second robot as operational instructions.

18. The multi-sectional robot of claim 17, wherein the operational instructions comprise instructions to activate an actuator, rotate a rotor, move along a primary motion platform, move along a secondary motion platform, adjust a visual output device, adjust an audio output device, adjust a gesture output device, or any combination thereof.

19. The multi-sectional robot of claim 17, wherein the instructions are configured to be executed by the processing system to cause the controller to:

receive feedback indicative of a movement of the multi-sectional robot; and

adjust the operational profile in response to determining the multi-sectional robot partially performed the movement.

20. The multi-sectional robot of claim 1, wherein the library of operational profiles comprises one or more functional capabilities of the first robot and the second robot, one or more protocols associated with the first robot and the second robot, and one or more limitations associated with the first robot and the second robot.

21. The multi-sectional robot of claim 1, wherein the operational profile is associated with a character profile of a character and comprises a set of actions, speech, interaction style, or any combination thereof of the character.