Claims

We Claim:

1. A modular frame for an intelligent robot capable of autonomous movement, including:

a modular interchangeable chassis comprising:

modules configured to perform unique functions, wherein the modules comprise:

a base module;

at least one functional module configured to attach to the base module directly or attach to the base module indirectly through at least one other module,

wherein each module of the at least one functional module comprises at least one smart connector,

wherein each one of the at least one smart connector comprises:

a means to enable physical connection of at least one module to at least one other module; and

a means for transferring data and power between the at least one module and the at least one other module; and

a smart connector chip configured to:

provide a unique code and verification data; and,

provide initialization functions and post-initialization functions;

wherein the base module is configured to:

provide autonomous movement for the intelligent robot;

control the actions and functions of the intelligent robot operations through the at least one smart connector; and,

provide power to the intelligent robot for operation through the at least one smart connector,

wherein the base module further comprises:

a memory for storing a data library comprising firmware, features, and functions of the modules, and operating instructions for the modules; and,

a first smart connector;

a second module of the at least one functional module, wherein the second module comprises a second smart connector;

wherein the second smart connector includes a unique code for said second module and firmware to enable the operation of said second module by the intelligent robot,

wherein the unique code is adapted to provide data relating to the second module to the base module,

wherein when the second module is affixed onto said modular frame, said second smart connector is adapted to electronically communicate with the first smart connector,

wherein, during an initialization process, said base module is adapted to obtain and process the data relating to the second module and data relating to all attached modules and to generate or add the data relating to the second module and data relating to all attached modules to a connection list of all modules directly or indirectly connected to the base module,

wherein said robot is adapted to use said connection list for performing operations of the robot,

wherein, further during the initialization process, the base module is adapted to obtain relevant information from the data library based on the data relating to the second module and data relating to all attached modules,

wherein the base module uses the relevant information from the data library to allow functionality of the intelligent robot, and,

wherein, during a post-initialization process after the initialization process, the at least one smart connector is configured to periodically verify the module.

2. The modular frame according to claim 1, wherein said base module further comprises a robot basic operating system and hardware code for controlling the modules affixed to said modular frame of said robot.

3. The modular frame according to claim 1, wherein said base module comprises CPU, MCU and power supply boards, a robot operating system Command library, and an Artificial Intelligence engine.

4. The modular frame according to claim 1, wherein said base module is further configured to communicate according to a communications protocol.

5. The modular frame according to claim 1, wherein the intelligent robot is capable of navigation during autonomous movement.

6. The modular frame according to claim 1, wherein the data relating to the second module and data relating to all attached modules obtained and processed by the base module comprises data regarding the manner of attachment of the second module and all attached modules and verification data of said second module and all attached modules.