The SpiNNaker neural computing project has created a hardware architecture capable of scaling up to a system with more than a million embedded cores, in order to simulate more than one billion spiking neurons in biological real time. The heart of this system is the SpiNNaker chip, a multi-processor System-on-Chip with a high level of interconnectivity between its processing units. Here we present a Dynamically Extendable SpiNNaker Chip Computing Module that allows a SpiNNaker machine to be deployed on small mobile robots. A nonneural application, the simulation of the movement of a flock of birds, was developed to demonstrate the general purpose capabilities of this new platform. The developed SpiNNaker machine allows the simulation of up to one million spiking neurons in real time with a single SpiNNaker chip and is scalable up to 256 computing nodes in its current state.

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