# Creating Intelligent Humanoid Robots
# Using the OpenCog AGI Architecture

*Timeline / Milestones*

| H1:<br>April-<br>Sep<br>2013 | • Creation of prototype system using OpenCog to control Hanson Robokind<br>• Initial integration of DeSTIN with OpenCog/Robokind<br>• Improvement of OpenCog infrastructure for effective real-time robot control |
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| | **Milestone:** OpenCog's knowledge base creates semantic representations corresponding to objects and simple spatial relationships that are recognized, via DeSTIN, through the Robokind's camera eyes |
| H2:<br>Oct 13 –<br>Mar 14 | • Completion of DeSTIN integration<br>• Testing and tuning of OpenCog for robot action control<br>• Revision of OpenCog language processing subsystem to enable flexible language learning |
| | **Milestone:** Using OpenCog's dialogue system, the robot can carry out simple, brief English conversations about what it sees, and what it's doing |
| H3:<br>April –<br>Sep<br>2014 | • Teaching the system emotion and gesture perception<br>• Experimentation with imitation learning<br>• Porting "building/playing with blocks" behaviors from game world to robot |
| | **Milestone:** The robot can carry out simple physical activities in the world, e.g. building with foam blocks and delivering objects, based on observing and verbally communicating with humans in that context |
| H4:<br>Oct 14 –<br>Mar 15 | • Emotionally modulated speech generation<br>• Teaching the system to describe its behaviors, and ask questions, appropriately<br>• Emotionally and socially appropriate linguistic communication |
| | **Milestone:** The robot can explain its activities and associated feelings, while carrying out simple physical activities together with humans (e.g. building simple structures with foam blocks, delivering items to people in a robot lab, walking to specified people and asking them questions) |