

Autonomous Systems Developer Survey Highlights

This infographic provides highlights from the CONVINCE Software Developer Survey.

Full Survey Results



@ Survey

Terminology

Deliberation language: The language used to define a deliberation logic (e.g. BT, FSM, MC, ...)

Deliberation logic: The specific instance of the logic the system will execute (e.g. Point-to-point navigation)

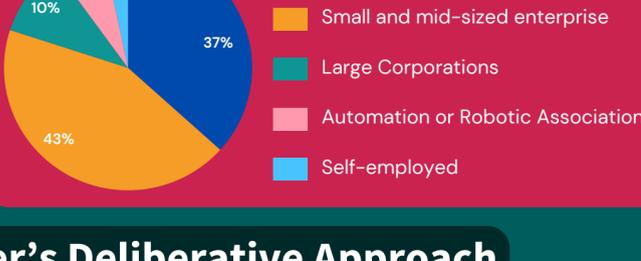
Deliberation engine: The actual SW/library that runs a specific deliberation language (e.g. SMACC, FlexBe, BehaviorTree.CPP, ...)

Survey Demographics

Number of Respondants

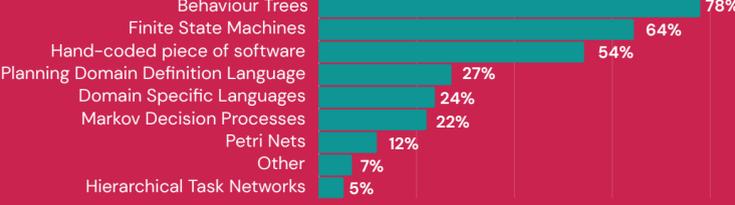
60 

Employment Entity



Developer's Deliberative Approach

Most Used Deliberation Languages



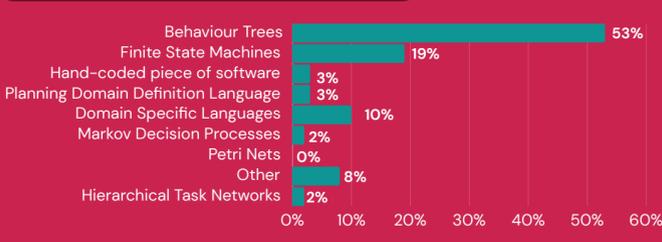
Top 2

Regularly used Deliberation Languages are Behaviour Trees and Finite State Machines.

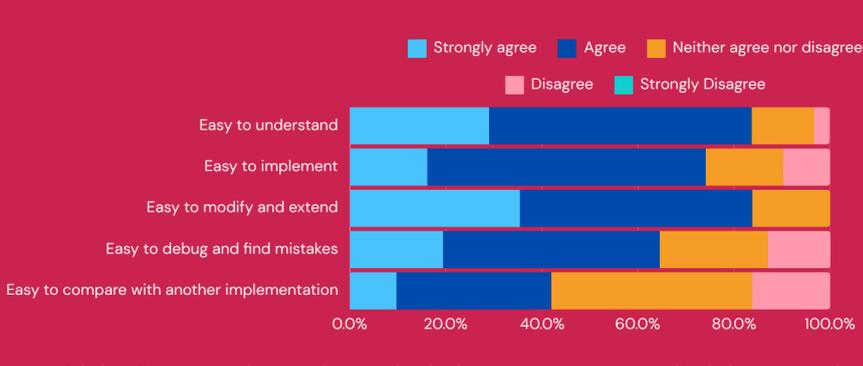
Preferred Deliberation Language

53%

Of respondents preferred Behaviour Trees.



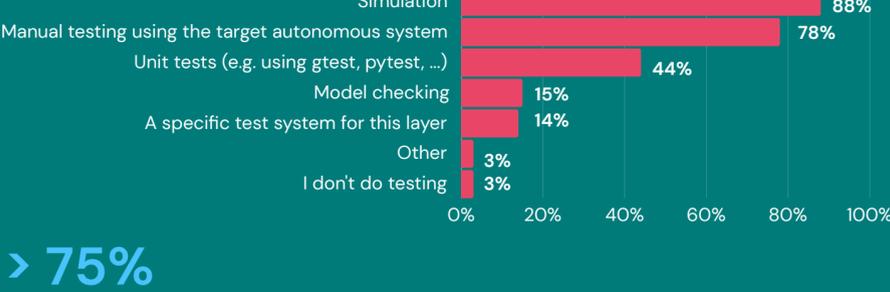
Handling of Behavior Trees during Development



Of the 31 respondents who prefer behaviour trees, most find them simple to understand, implement and modify, but challenges remain in debugging and comparing, highlighting areas for improvement.

Deliberation Logic

Usage of Testing Methods for Deliberation Logic



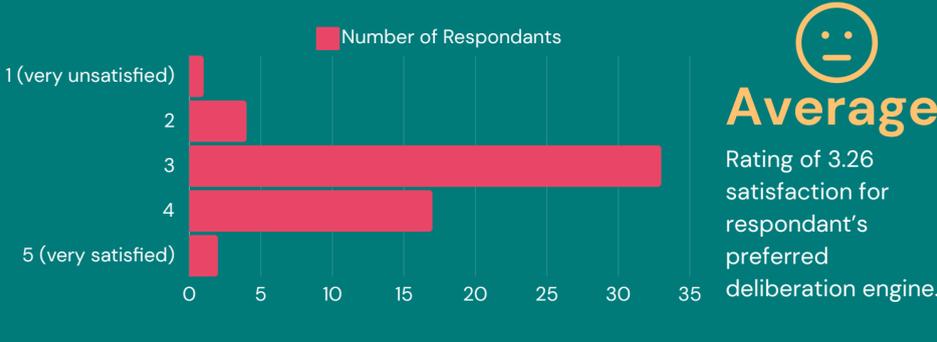
> 75%

Of respondents use simulation and manual checking to test deliberation logic.

Only 15%

Of respondents use model checking.

Satisfaction of Current Testing Methods for Respondant's Preferred Deliberation Engine

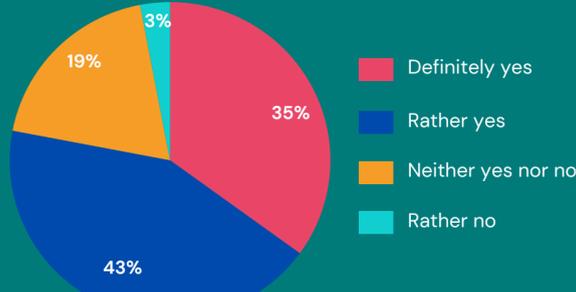


33 Respondants rated their satisfaction level as '3' indicating that the majority aren't completely satisfied with their current testing method and there's room for improvement.

Need for a more Systematic Testing or Verification Approach with Deliberation Engines

78%

Of respondents answered 'Definitely Yes' or 'Yes' to needing a more systematic testing or verification approach within their deliberation engine.

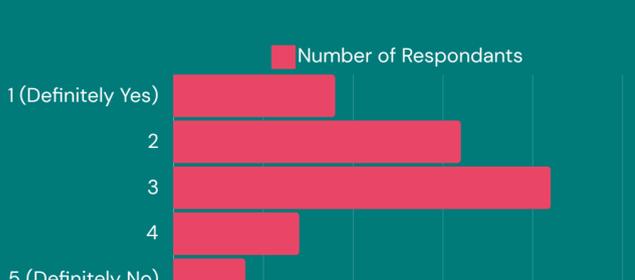


Willingness to Spend Effort on Writing a Formal Model of Deliberation Logic if that Provides More Systematic Testing or Verification Methods.



Average

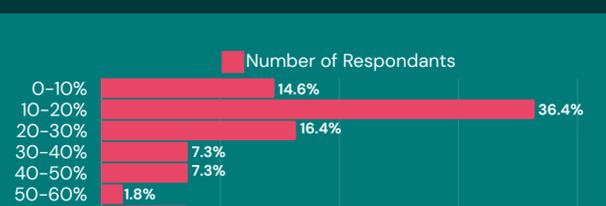
Rating of 2.67 indicating that respondents would generally be willing to spend effort on writing a formal model of their deliberation logic for improved systematic testing or verification.



Percentage of Total Development Time for Systematic Verification of the Deliberation Logic

20%

Is the preferred amount of time developers are willing to commit.



See the full Survey Results here



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