

# Robot action planning on omni-surface through multi-modal input and visualization



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## Summary

- Growing industries strive to find the most efficient and effective real-time systems.
- We are in the efforts of developing an interface which allows users to utilize an omni-surface that gives input in multiple modes.
- The commands are relayed to the machinery through a series of steps that converts the input to output through DRS translation.

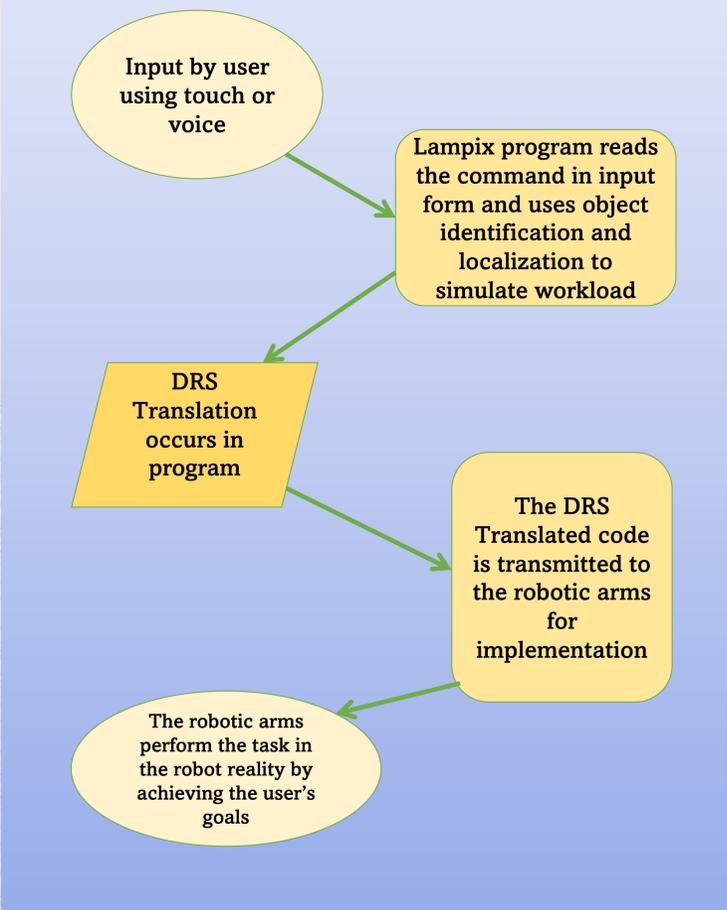


## Working and analysis

- Use of Lampix allows us to manipulate the program to maximize optimization.
- To maximize human-robot interaction, the interface accepts multiple modes of input like touch and speech.
- The Lampix program uses an approach to AR to execute the workload through its visualization by using object identification and localization

## Aim

- To allow multiple kinds of user input to improve Human-Robot interaction.
- Providing a cheap and effective alternative to expensive and high maintenance Augmented Reality (AR) systems.
- To recreate AR systems that can be used in versatility throughout multiple industries.



## Conclusion

- Introduction of an easily manipulated interface that maximizes user interaction has been a long-awaited demand.
- These kinds of systems are the future of automated manufacturing through precise visualization.
- Application of augmented reality both, maximizes the effectiveness of user interaction, and the execution of the user input work.

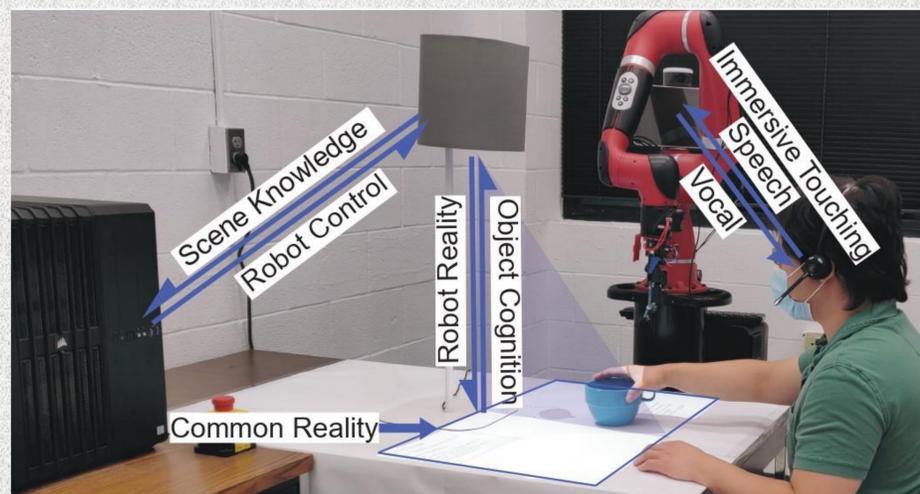


Fig. 1, Human-Robot Interaction set-up through a common reality. ICSR Common Reality, Fujian Yan, Vinod Nambodiri, and Hongsheng He

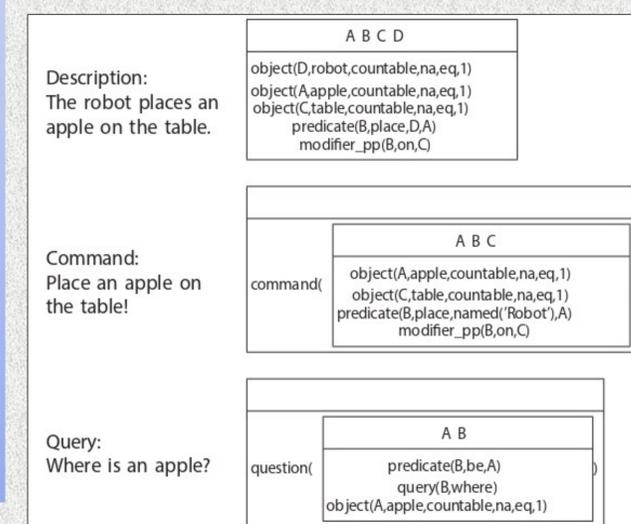


Figure 3 shows us the simplified version of what we refer to as DRS Translation. It shows us the input and the translated input commands that are fed into the robot to accomplish the given task. As we can see, the use of keywords and localization variables play a major role in the translation process.

Fig. 3 Example of Discourse Representation Structures (DRS) Translation. ICSR Common Reality, Fujian Yan, Vinod, Nambodini, and Hongsheng He