# Workshop on Open Platforms for Medical Robotics Research

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# Overview

- Open platforms: dVRK and Raven II

- Collaborative Robotics Toolkit (CRTK) as a "common API" to these and other open platforms

- Hands On sessions

- Community presentations

- Community discussion

# Morning Agenda

| Time | Topic | Speakers | Details |
|------|-------|----------|---------|
| 08:30 | Introduction | Peter Kazanzides (JHU) | Welcome and schedule for the workshop |
| 08:45 | da Vinci Research Kit (dVRK) | Peter Kazanzides (JHU) | Overview of dVRK |
| 09:00 | Raven II | Melody Su (UW) | Overview of Raven II |
| 09:15 | CRTK and ROS | Anton Deguet (JHU) | Collaborative Robotics Toolkit (CRTK), including ROS implementation |
| 10:00 | Coffee Break | | |
| 10:30 | Simulators | Greg Fischer, Adnan Munawar (WPI) | Simulation environments |
| 11:15 | Hands On I | | Hands on sessions with input devices and simulated/remote robots |
| 12:00 | Lunch | | |

# Afternoon Agenda

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|---|---|---|---|
| 12:00 | Lunch | | |
| 13:30 | Hands On II | | Hands on sessions with input devices and simulated/remote robots |
| 14:15 | Community Presentations I | See below | Solicited presentations from the community |
| 15:00 | Coffee Break | | |
| 15:30 | Community Presentations II | See below | Solicited presentations from the community |
| 16:30 | Community Discussion | | Discussion of community needs (shared slides) |
| 17:00 | Adjourn | | |

See link at:  https://collaborative-robotics.github.io/ismr-2019-workshop.html

# Afternoon Talks

| Time | Title | Speaker | Affiliation |
|------|-------|---------|-------------|
| 14:15 | Technologies for Autonomous Robotic Surgery | Paolo Fiorini | Univ. of Verona |
| 14:30 | Integration of Devices with the dVRK Platform | Arianna Menciassi | Scuola Superiore Sant'Anna |
| 14:45 | A Dual-User Telerobotic Platform for Surgical Training using dVRK | Rajni Patel | Western University |
| 15:30 | A multi-user-interface, multi-robot workcell for applications in surgical and rehabilitation robotics | Mahdi Tavakoli | Univ. of Alberta |
| 15:45 | Simulation Environment for RAVEN II Surgical Robot | Homa Alemzadeh | Univ. of Virginia |
| 16:00 | A Framework for Complementary Situation Awareness (CSA) | Russell Taylor | Johns Hopkins Univ. |
| 16:15 | dVRK Community Research Highlights | Simon DiMaio | Intuitive Surgical |

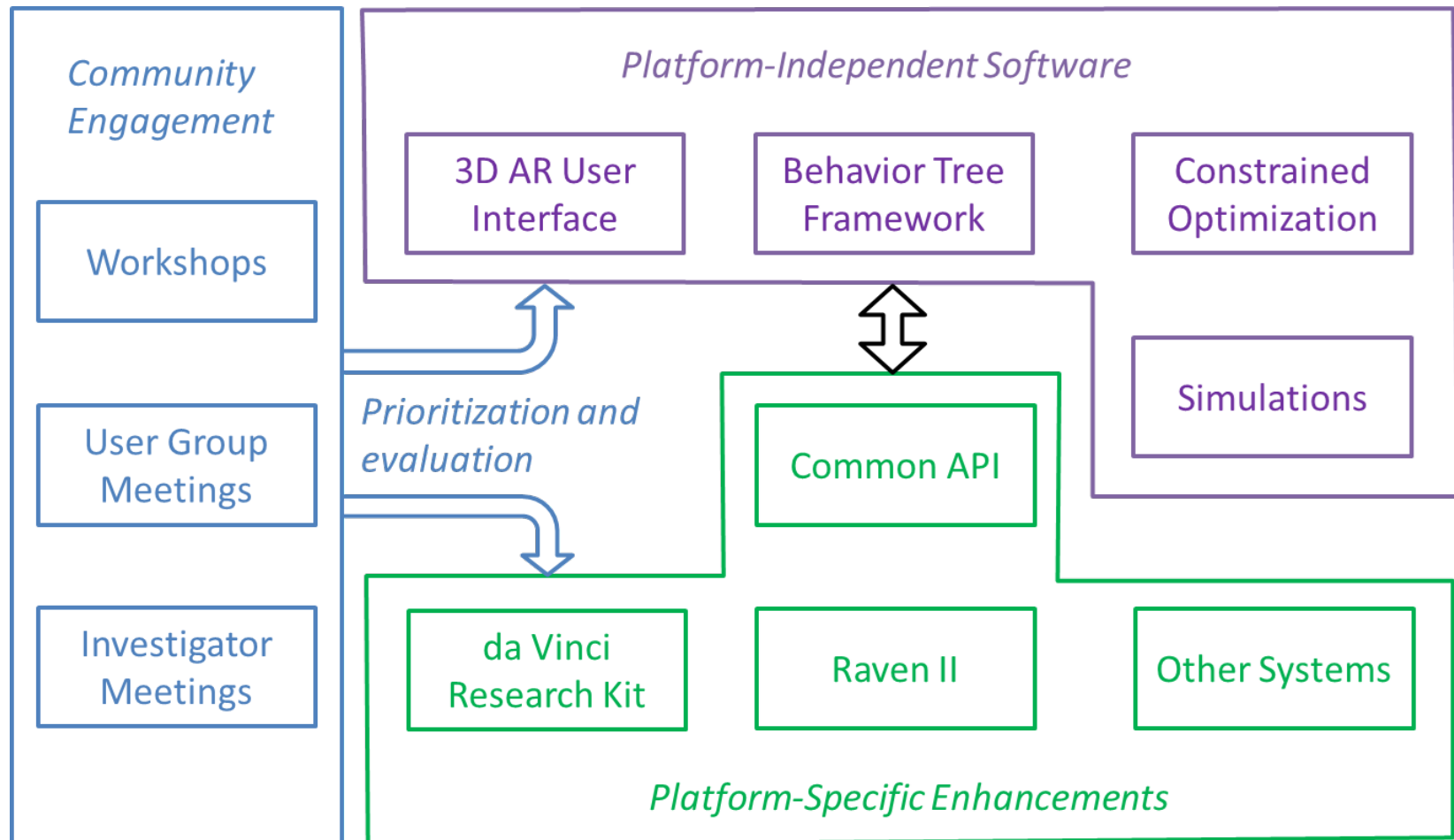# Historical Context


Raven II


da Vinci Research Kit (dVRK)
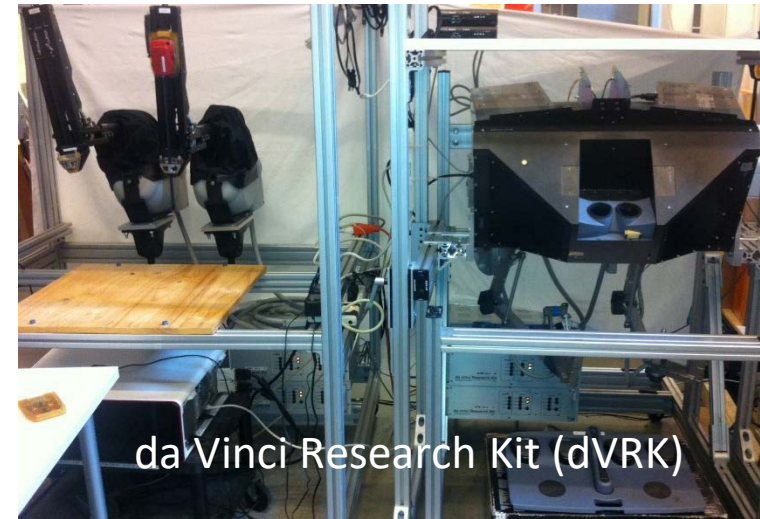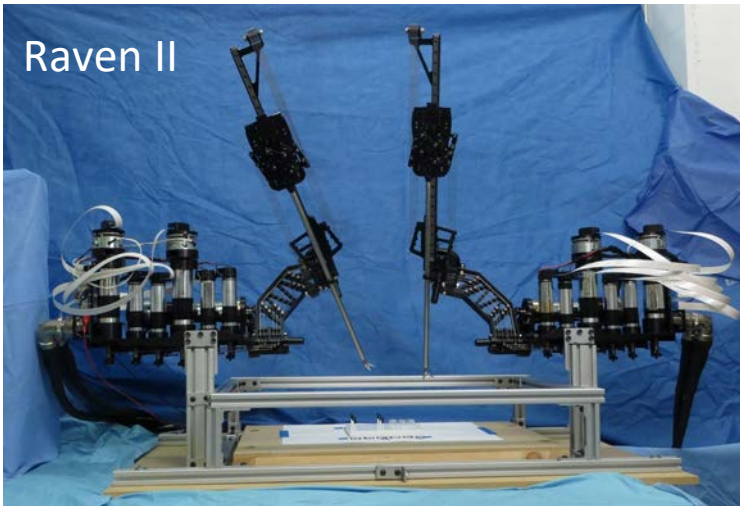
2002: Raven I, Univ. of Washington
2012: Raven II community (NSF CRI)
2013: spin out to Applied Dexterity

1999: Intuitive Surgical markets da Vinci
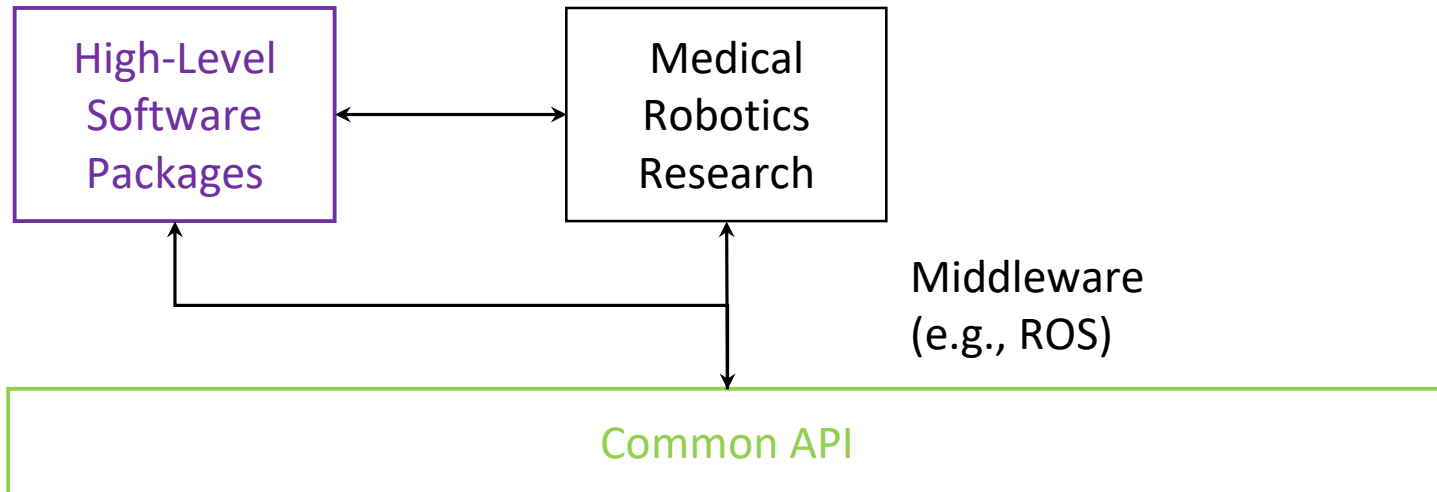2004: first dVRK at Johns Hopkins Univ.
2012: dVRK community
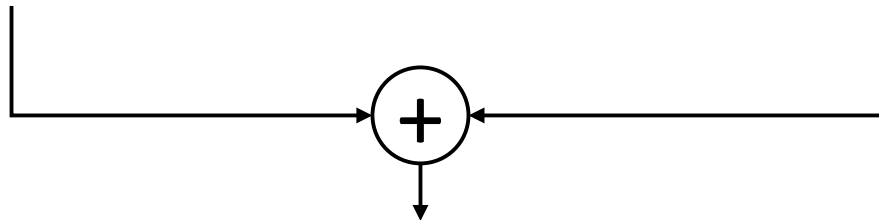
2016: NSF NRI: Software Framework for Research in Semi-Autonomous Teleoperation
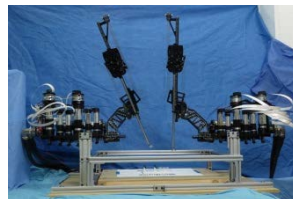
# NSF NRI: Software Framework for Research in Semi-Autonomous Teleoperation

# Common API