

OpenHRP Made More Accessible

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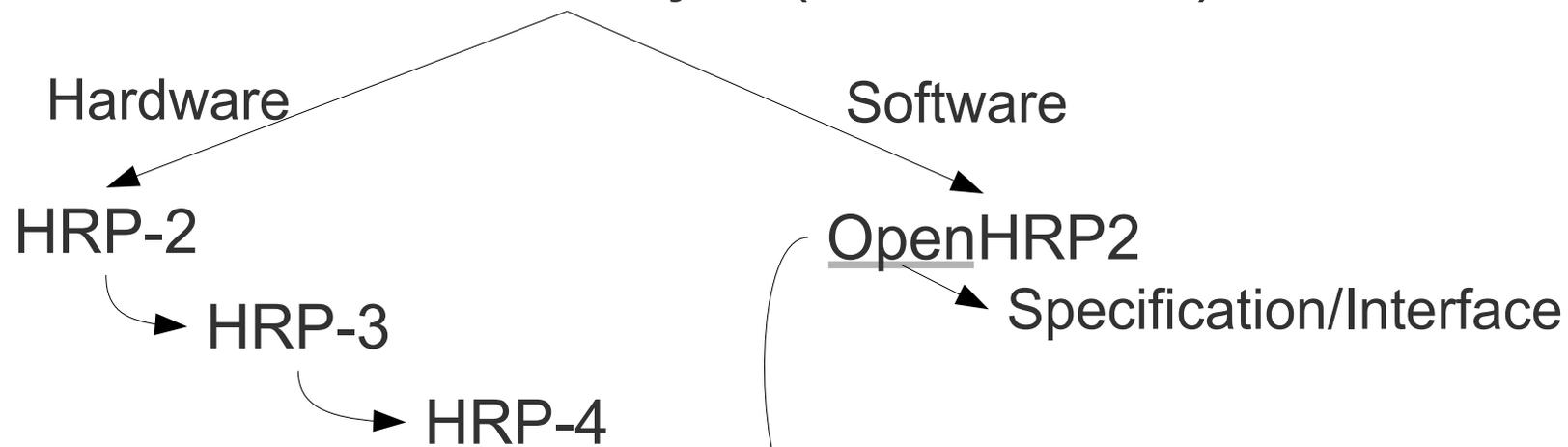
2011/09/08

RSJ 2011, 2Q1

IS:Advances in Open-source Robotics Tools(1/2)

- Roots
- What's in it?
- What's to advance?
- Implemented Changes
- Actual Deployment
- Summary/Future Hopes

Humanoid Robotics Project(1998 - 2003)



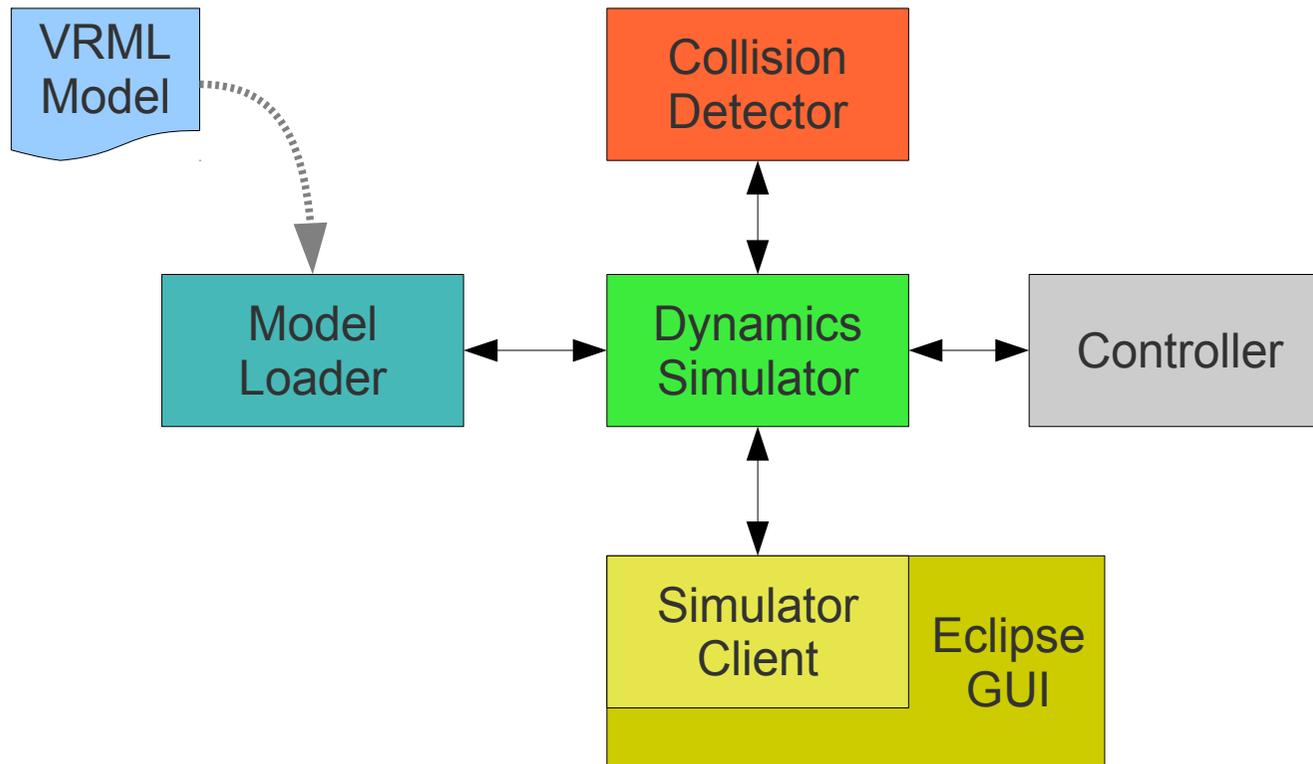
Open source since 2006

- Available from **AIST** website
- Documentation available
- Annual updates

What's in it?

Traditional Answer:

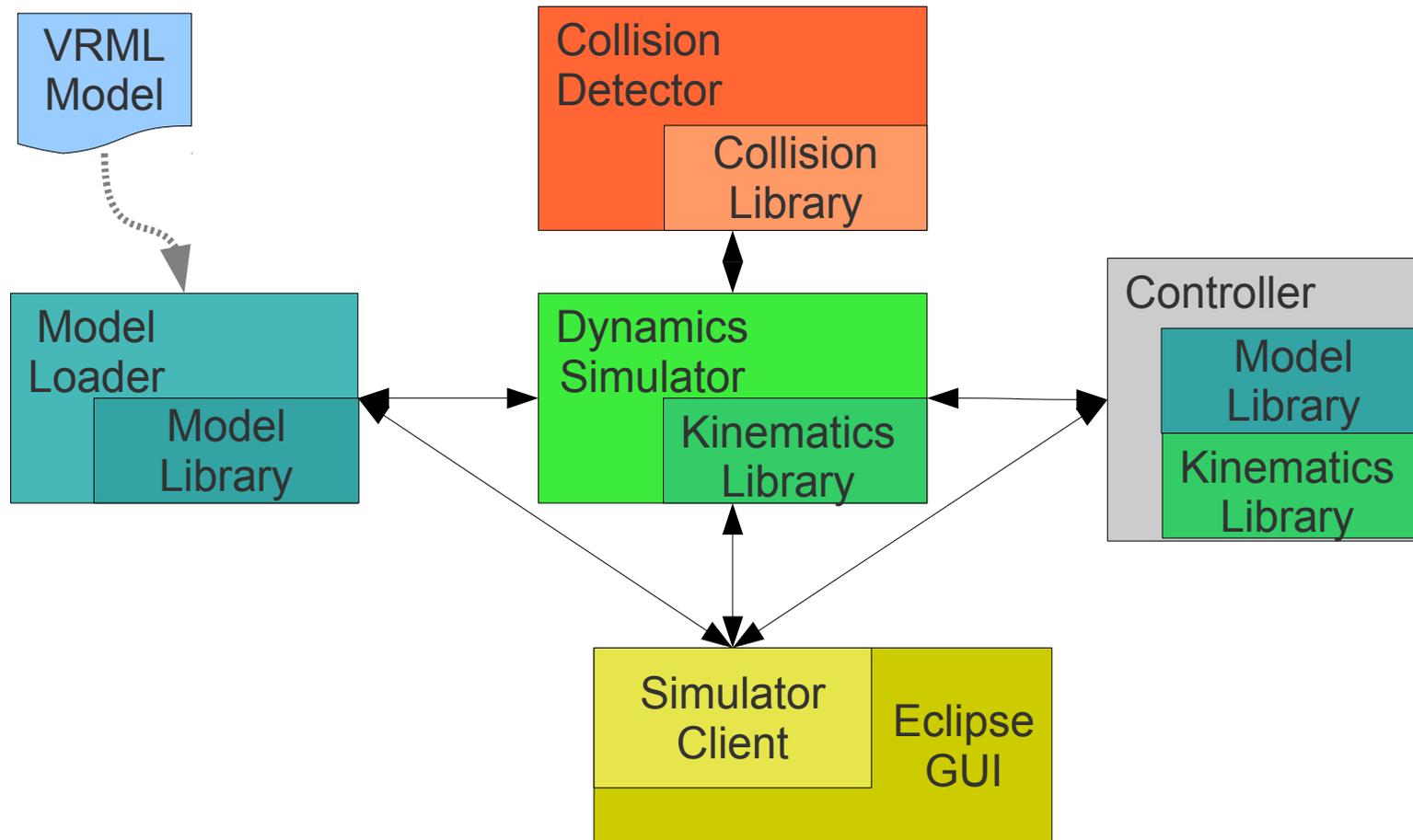
OpenHRP = Distributed Dynamic Robot Simulator



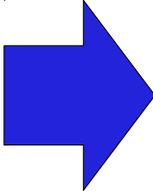
What's in it?

Alternative Use:

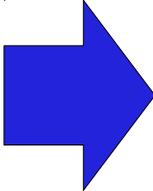
OpenHRP = Software Component Base Libraries



- Annual Update
- Convergence based Inverse Kinematics(IK)
- Multiple data files
- Component based documentation

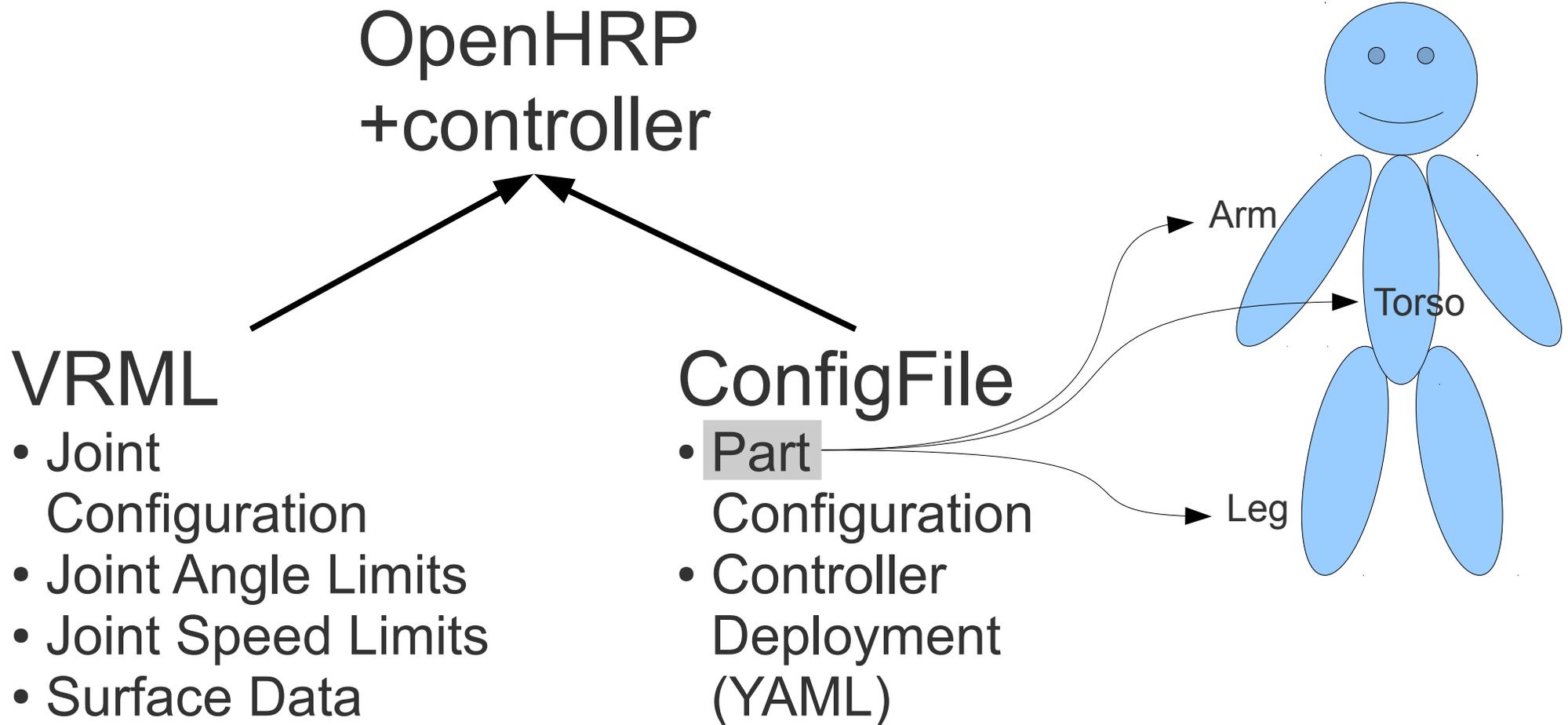
- Annual Update
 - Convergence based Inverse Kinematics
 - Multiple data files
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- 
- A large blue arrow pointing from the left column of bullet points to the right column, indicating a transition or implementation of changes.
- Access to RCS
 - Analytic Solution based IK
 - Single data file
 - Usage based documentation

- Annual Update
- Access to RCS
- Col Inv OpenHRP version 3.1 + Changes hosted on:
<http://code.google.com/p/openhrp-aist-grx/>
- Mu Includes:
 - Updates posted on mailing list
 - Collada support
- Col doc To include
 - Updates to CORBA name handling
 - Python scripting interface

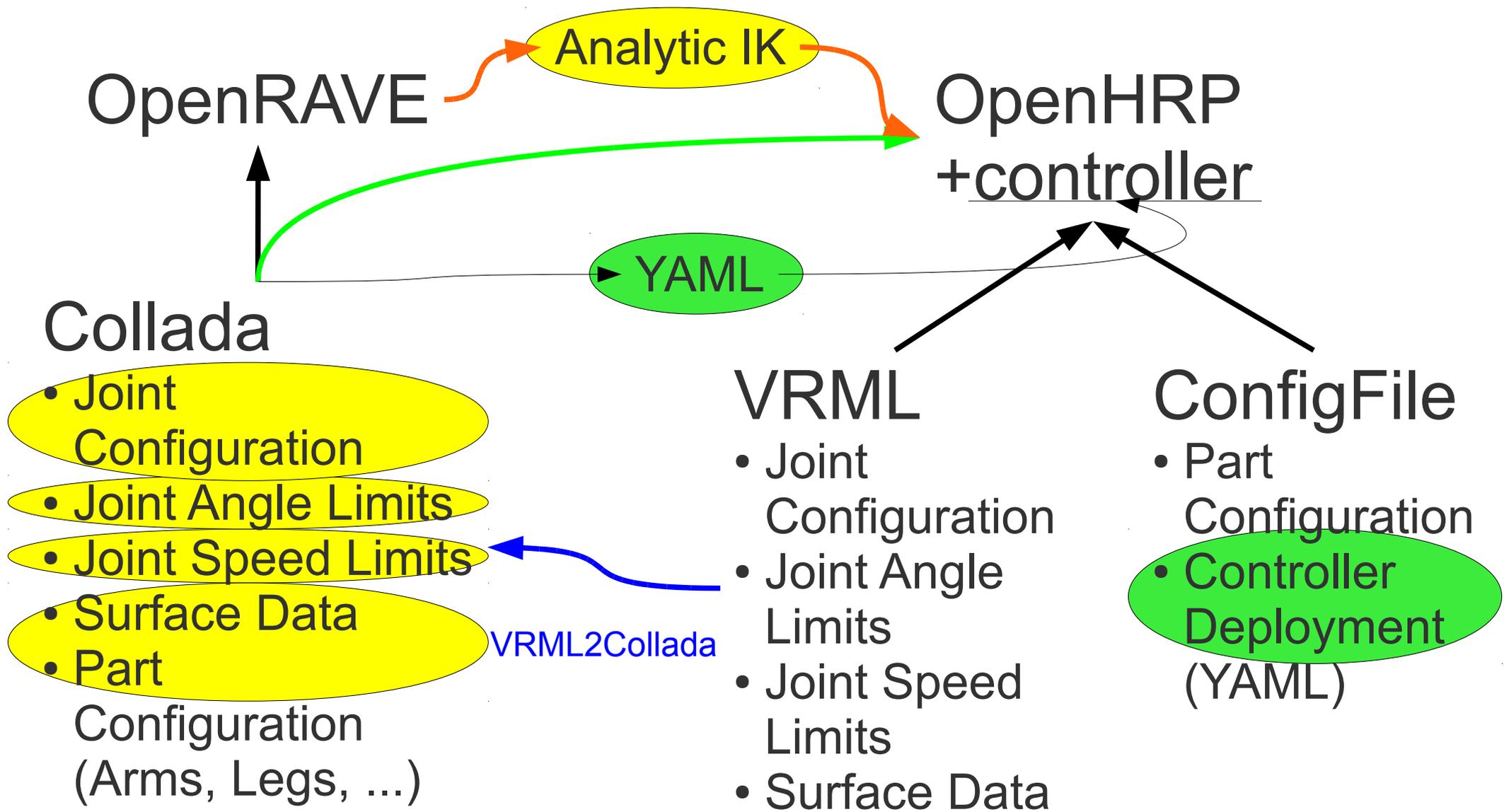
- Annual Update
 - **Convergence based Inverse Kinematics**
 - Multiple data files
 - Component based documentation
- 
- A large blue arrow pointing from the left column of items to the right column of items, indicating a transition or change.
- Access to RCS
 - **Analytic Solution based IK (added)**
 - Single data file
 - Usage based documentation

Implemented Changes

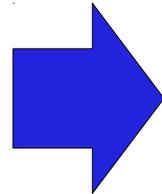
What kind of data is needed?



Implemented Changes



- Annual Update
- Convergence based Inverse Kinematics
- Multiple data files
- **Component based documentation**



- Access to RCS
- Analytic Solution based IK
- Single data file
- **Usage based documentation**

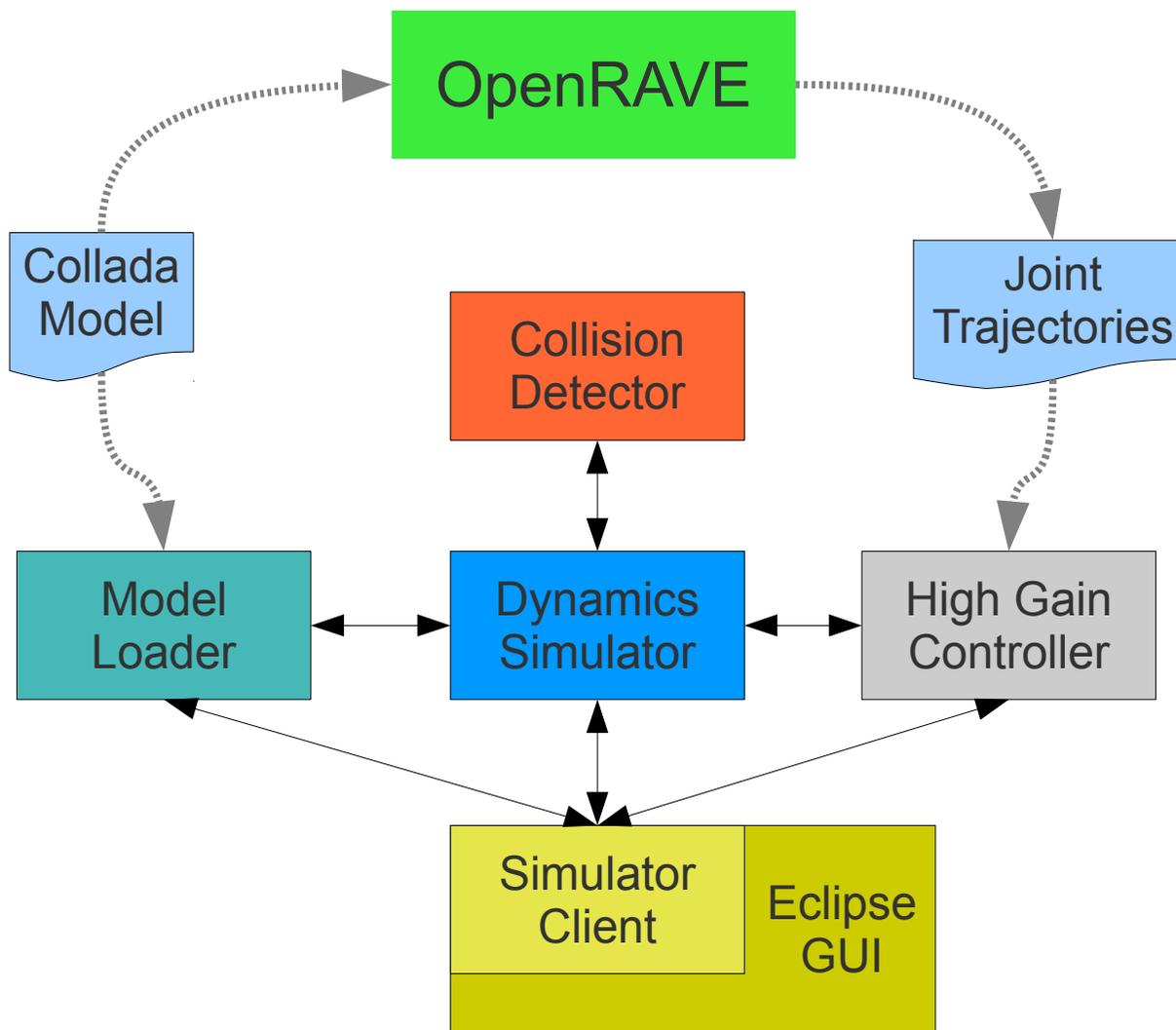
Actual Deployment (Minimum Requirements to Simulation)

Required

- Joint Configuration
- Joint Angle Limits

Optional

- Joint Speed Limits
- Link CoG
- Link Mass
- Accurate Surface Data



- OpenHRP still moving forwards
- Ground work laid out to reach new developers
- Collaboration and Integration is Key

- Ecosystem of scripts for Collada+extensions
- Integration of other useful tools

Thank you for your attention