Robotics Systems Types - Feature #1370
RCIRST converter should expose a public method for converting RCI types into corresponding RST types (and vice versa)

01/29/2013 04:09 PM - C. Emmerich

Status:	Closed	**Start date:**	01/29/2013
Priority:	Normal	**Due date:**	
Assignee:	C. Emmerich	**% Done:**	20%
Category:	cpp	**Estimated time:**	0.00 hour
Target version:	rsb-0.16		

Description

In a project like FlexIRob, I have have to covnert RCI types to RST types frequently. So far, I have to do this manually. Hence, it would be desirable to have a method for converting RCI types (such as rci::Pose) to their corresponding RST types (such as rst::geometry::Pose) and vice versa. Inherently, the RCIRST converter (such as rcirst::PoseConverter) computes this conversion but does not expose a public accessable interface for that. Something like

```
class PoseConverter: public rsb::converter::Converter<std::string> {
public:

    static toRCI(const rst::geometry::Pose& pose);
    static toRST(const rci::Pose& pose);

    ...
```

would easily do the job...

Associated revisions

Revision b7e776e9 - 06/06/2013 10:04 AM - Arne Nordmann

Extended rci PoseConverter to expose rci to rst conversion

refs #1370

- PoseConverter now provides the public static methods rstToDomain and domainToRST to do the conversion between rci::Pose and rst::geometry::Pose
- This can serve as a template for all RCI converters
- All remainig code (apart from the rst<>rci conversion) can probably be extracted in a templated base rci-rst converter in the future

Revision f8ccd2b1 - 06/06/2013 10:04 AM - Arne Nordmann

Extended rci PoseConverter to expose rci to rst conversion

refs #1370

- PoseConverter now provides the public static methods rstToDomain and domainToRST to do the conversion between rci::Pose and rst::geometry::Pose
- This can serve as a template for all RCI converters
- All remainig code (apart from the rst<>rci conversion) can probably be extracted in a templated base rci-rst converter in the future

Revision 74777865 - 07/26/2016 01:16 PM - Arne Nordmann

Extended rci PoseConverter to expose rci to rst conversion

refs #1370

- PoseConverter now provides the public static methods rstToDomain and domainToRST to do the conversion between rci::Pose and rst::geometry::Pose
- This can serve as a template for all RCI converters
- All remainig code (apart from the rst<>rci conversion) can probably be extracted in a templated base rci-rst converter in the future

History

#1 - 02/01/2013 06:02 PM - C. Emmerich

Or, even better: Is it possible to extend the rci::Pose Interface in the rcirst-library with an additional constructor

```
rci::Pose(const rst::geometry::Pose&){
...
}
```

and an additional method

```
rst::geometry::Pose toRST() {
...
}
```

?

#2 - 02/04/2013 11:38 AM - Anonymous

- Status changed from New to Feedback

Right now, all the rst rci converters are hand-coded, yet very similar. They create the rst (intermediate) object anyway before passing it to the protobuf string converter, so they could be manually split up to publicly expose this step / rst object.
However, I wonder if we could already facilitate project:rosetta to safe manual work:

- The converters use the same interface (base interface that is common to almost all rci types) in all converters for reading / writing the rci types anyway
- So the only difference is the how they access the protobuf objects, which should be possible to generate via project:rosetta

#3 - 06/04/2013 02:54 PM - S. Wrede

- Category set to cpp
- Assignee set to C. Emmerich
- Target version set to rsb-0.9

Our plan for the future would be to utilize Rosetta-based code generation to augment the RST-based domain objects with RCI functionality. This would require different data storage solutions (here e.g. NemoMath vectors should be used) and the (probably) template-based integration of helper /

conversion functionality from RCI.

As a workaround, it should be possible to utilize the conversion functions contained in the libraries that are part of the rst-converters project.

#4 - 06/06/2013 03:32 AM - J. Moringen

- Status changed from Feedback to In Progress

- % Done changed from 0 to 20

We prototypically implemented the short-term solution for one converter. Christian will take care of the finalizing it and applying it to the remaining converters.

#5 - 06/11/2013 04:37 PM - J. Moringen

- Target version changed from rsb-0.9 to rsb-0.10

#6 - 12/12/2013 05:02 PM - J. Moringen

- Target version changed from rsb-0.10 to rsb-0.11

#7 - 01/07/2015 07:09 PM - J. Moringen

- Target version changed from rsb-0.11 to rsb-0.12

#8 - 04/30/2015 04:07 PM - J. Wienke

- Target version changed from rsb-0.12 to rsb-0.13

#9 - 11/24/2015 01:37 PM - J. Wienke

What is the state of this issue?

#10 - 03/03/2016 12:17 PM - J. Moringen

- Target version changed from rsb-0.13 to rsb-0.14

#11 - 06/08/2016 09:03 PM - J. Moringen

- Target version changed from rsb-0.14 to rsb-0.15

#12 - 11/07/2016 07:24 PM - J. Moringen

- Target version changed from rsb-0.15 to rsb-0.16

#13 - 04/03/2017 06:45 PM - J. Moringen

- Status changed from In Progress to Closed