

## CoCoA-5 - Feature #1461

### Automatic mapping for multiplication?

10 Jun 2020 16:06 - Anna Maria Bigatti

<b>Status:</b>	Closed	<b>Start date:</b>	10 Jun 2020
<b>Priority:</b>	Normal	<b>Due date:</b>	
<b>Assignee:</b>	Anna Maria Bigatti	<b>% Done:</b>	100%
<b>Category:</b>	enhancing/improving	<b>Estimated time:</b>	3.66 hours
<b>Target version:</b>	CoCoA-5.4.0	<b>Spent time:</b>	3.70 hours
<b>Description</b>			
<b>Related issues:</b>			
Related to CoCoA-5 - Design #635: Automatic mapping of RingElem (in operation...		<b>Closed</b>	<b>22 Oct 2014</b>
Related to CoCoALib - Feature #645: Automatic mapping of RingElem: user selec...		<b>Rejected</b>	<b>04 Nov 2014</b>
Related to CoCoA-5 - Design #637: Undesirable consequence of automatic mappin...		<b>Closed</b>	<b>23 Oct 2014</b>
Related to CoCoA-5 - Feature #7: Automatic mapping between (some) rings		<b>Resolved</b>	<b>20 Oct 2011</b>
Related to CoCoALib - Design #1414: Make class RingElemVector?		<b>In Progress</b>	<b>12 Feb 2020</b>

### History

#### #1 - 10 Jun 2020 16:07 - Anna Maria Bigatti

- Related to Design #635: Automatic mapping of RingElem (in operation with a compound value) added

#### #2 - 10 Jun 2020 16:07 - Anna Maria Bigatti

- Related to Feature #645: Automatic mapping of RingElem: user selectable at run-time (GlobalManager?) added

#### #3 - 10 Jun 2020 16:07 - Anna Maria Bigatti

- Related to Design #637: Undesirable consequence of automatic mapping of RingElems? added

#### #4 - 10 Jun 2020 16:17 - Anna Maria Bigatti

- Category set to enhancing/improving
- Target version set to CoCoA-5.4.0
- % Done changed from 0 to 20
- Estimated time set to 10.00 h

Talking with John, getting bored in the hospital ;-)  
first implementation

#### #5 - 10 Jun 2020 16:20 - Anna Maria Bigatti

use try/catch for better error message?  
direct use of myMulByCoeff for efficiency? Is it worth it? (John guesses not)

#### #6 - 20 Jun 2020 21:34 - John Abbott

- Related to Feature #7: Automatic mapping between (some) rings added

#### #7 - 20 Jun 2020 21:36 - John Abbott

- Status changed from New to Resolved
- % Done changed from 20 to 50

I have revised Anna's impl (from a joint design over the phone).

In fact we now have the four arith ops with auto conversion.

I have also done:

- MatrixOps.C
- MatrixOps-KroneckerProd.C
- module.C (mostly)

#### #8 - 22 Jun 2020 17:59 - John Abbott

Here are some more places where **ERR::MixedRings** appears in the source -- which of these should be changed?

- **DenseMat**: myRowMul, myColMul, myAddRowMul, myAddColMul
- FieldIdeal -- needs vector of RingElem in same ring
- **ideal.C** many, some need vector of RingElem in same ring
- **Matrix.C** for SetEntry, also lamEqual
- **MatrixSpecial.C** for JacobianMat which needs vector of RingElem in same ring
- **MatrixView** many cases, some need vector of RingElem in same ring
- PolyFamilies for DicksonPoly
- **ring.C** for operator+= and so on
- **RingElemOps-CoprimeFactorBasis** needs vector RingElem from same ring.
- **SparsePolyOps-XXX** many

#### #9 - 22 Jun 2020 18:00 - John Abbott

- Related to Design #1414: Make class RingElemVector? added

#### #10 - 22 Oct 2020 17:10 - John Abbott

I suggest closing this issue, and copying any unresolved parts into issue [#7](#).

It would be nice to have issue [#7](#) as the central point for matters relating to "automatic ringelem conversion".

#### #11 - 27 Oct 2020 19:08 - John Abbott

- Status changed from Resolved to Closed

- % Done changed from 50 to 100

- Estimated time changed from 10.00 h to 3.66 h

As suggested in comment 10 above, I have copied the "done list" and the "todo list" to issue [#7](#).

Closing this issue -- the main part has been implemented.