

## CoCoA-5 - CoCoA-5 Open Issues

| #                    | Target version | Status      | Priority | Subject   | Updated           | % Done | Assignee           |
|----------------------|----------------|-------------|----------|---|-------------------|--------|--------------------|
| <b>None (11)</b>     |                |             |          |   |                   |        |                    |
| 230                  | CoCoA-5.?.?    | New         | Normal   | More curiously slow code -- squaring a polynomial                 | 04 Apr 2014 15:10 | 0      |                    |
| 421                  | CoCoA-5.?.?    | New         | Normal   | Allow user to give a name to a ring (in C5)                       | 18 Jul 2014 15:05 | 10     |                    |
| 422                  | CoCoA-5.?.?    | New         | Normal   | Bug or feature for protected name? (Use command)                  | 04 Apr 2014 15:09 | 0      |                    |
| 453                  | CoCoA-5.?.?    | In Progress | Normal   | Automatic conversion from INT (or RAT) to RINGELEM                | 02 Sep 2014 11:15 | 20     |                    |
| 633                  | CoCoA-5.?.?    | New         | Normal   | New operations? ScalarProduct(MODULELEM,LIST), MATRIX * MODULELEM | 17 Mar 2017 10:55 | 0      |                    |
| 770                  | CoCoA-5.?.?    | New         | Normal   | CoCoA type "cone"   | 22 May 2017 14:12 | 0      |                    |
| 1175                 |                | New         | Normal   | intersection  | 05 Apr 2018 09:29 | 0      |                    |
| 1304                 |                | New         | Low      | Hermite normal form   | 29 Aug 2019 14:43 | 0      |                    |
| 1586                 |                | In Progress | Normal   | Profiling with clang  | 02 Apr 2021 09:28 | 10     | Anna Maria Bigatti |
| 1593                 |                | New         | Normal   | CanonicalHom  | 07 May 2021 08:20 | 0      |                    |
| 1751                 |                | In Progress | Normal   | Manual of functions vs ManExamples                                | 03 Jul 2023 20:54 | 10     | Anna Maria Bigatti |
| <b>bug (10)</b>      |                |             |          |   |                   |        |                    |
| 1228                 | CoCoA-5.4.2    | In Progress | High     | SLUG: filling an array  | 03 Feb 2022 19:42 | 30     | John Abbott        |
| 1229                 | CoCoA-5.4.2    | New         | Normal   | append is slow  | 04 Nov 2021 20:28 | 0      |                    |
| 1406                 | CoCoA-5.4.4    | New         | Normal   | Poor memory management?   | 15 Jan 2024 19:51 | 0      |                    |
| 1502                 | CoCoA-5.4.2    | In Progress | Normal   | SystemCommand in Microsoft version                                | 03 Feb 2022 19:46 | 50     | John Abbott        |
| 1552                 | CoCoA-5.4.2    | New         | Normal   | subst: not checking args properly                                 | 03 Feb 2022 19:07 | 0      |                    |
| 1574                 | CoCoA-5.4.2    | New         | Normal   | ApproxSolveTF   | 24 Sep 2021 22:29 | 0      |                    |
| 1604                 | CoCoA-5.4.2    | In Progress | Normal   | SqFreeFactor crashes over non-perfect field                       | 28 Sep 2022 15:00 | 10     |                    |
| 1639                 | CoCoA-5.4.2    | New         | Normal   | RealRoots: crashes after interrupting                             | 07 Dec 2021 20:26 | 0      |                    |
| 1781                 | CoCoA-5.4.2    | Feedback    | Urgent   | GenReprCompute: SERIOUS ERROR                                     | 09 Feb 2024 08:16 | 90     | Anna Maria Bigatti |
| 1794                 | CoCoA-5.4.2    | Resolved    | Normal   | Do not use random inside tests!!                                  | 10 May 2024 11:22 | 70     |                    |
| <b>Cleaning (14)</b> |                |             |          |   |                   |        |                    |
| 376                  | CoCoA-5.?.?    | In Progress | Normal   | Hilbert: Redesign hp.cpkg5 and public functions in TmpHilbert.C   | 06 Aug 2020 12:21 | 10     | Anna Maria Bigatti |
| 465                  | CoCoA-5.4.2    | New         | Normal   | Emacs UI; remove cruft  | 13 Nov 2020 11:17 | 0      |                    |
| 474                  | CoCoA-5.4.2    | In Progress | Urgent   | Eliminate package BinRepr   | 03 Feb 2022 19:47 | 50     | Anna Maria Bigatti |

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|------|----------------|-------------|----------|---|-------------------|--------|--------------------|
| 476  | CoCoA-5.4.2    | In Progress | Low      | Review utility of package IO                              | 03 Feb 2022 19:09 | 40     | Anna Maria Bigatti |
| 477  | CoCoA-5.?.?    | New         | Normal   | Eliminate keyword Alias?                                  | 04 Apr 2014 14:31 | 0      |                    |
| 480  | CoCoA-5.?.?    | New         | Normal   | gcd too slow for large degree univariate poly             | 30 Oct 2019 22:44 | 0      |                    |
| 491  | CoCoA-5.?.?    | In Progress | Normal   | Cleaning: Cruft in CoCoA-5 packages                       | 25 Jul 2018 14:26 | 20     |                    |
| 929  | CoCoA-5.4.2    | In Progress | Normal   | Clean up CoCoALibSupplement                               | 03 Feb 2022 19:48 | 20     | Anna Maria Bigatti |
| 989  | CoCoA-5.?.?    | In Progress | Normal   | init file obligatory?                                     | 01 Dec 2016 11:36 | 10     |                    |
| 1192 | CoCoA-5.4.2    | New         | Normal   | RealRoots: rational roots (but not binary rational roots) | 04 Nov 2021 20:29 | 0      |                    |
| 1351 | CoCoA-5.?.?    | New         | Normal   | Clean up package points.cpkg                              | 25 Oct 2019 13:34 | 0      |                    |
| 1648 | CoCoA-5.4.2    | New         | Normal   | ApproxSolve and RationalSolve take different input        | 03 Feb 2022 19:08 | 0      |                    |
| 1679 | CoCoA-5.4.2    | New         | Normal   | BuiltinFunctions-GFan includes normaliz?!?                | 20 Apr 2022 21:49 | 0      |                    |
| 1746 | CoCoA-5.4.2    | Feedback    | Normal   | ManExamples target: need to reset VerbosityLevel          | 10 May 2024 11:08 | 90     | Anna Maria Bigatti |

#### CoCoA-4 function to be added (17)

|     |             |             |        |  |                   |    |                    |
|-----|-------------|-------------|--------|--|-------------------|----|--------------------|
| 78  | CoCoA-5.4.2 | In Progress | High   | Elim ordering and matrix ordering in CoCoA-5                     | 28 Mar 2024 07:25 | 50 | Anna Maria Bigatti |
| 171 | CoCoA-5.?.? | New         | High   | Negate LIST, MAT,...   | 04 Apr 2014 16:27 | 0  |                    |
| 175 | CoCoA-5.4.4 | In Progress | Normal | Approximate BuchbergerMoeller: port to CoCoA-5                   | 14 Mar 2023 22:12 | 70 | Anna Maria Bigatti |
| 368 | CoCoA-5.4.2 | In Progress | Normal | port SmithNormalForm (CoCoA-4)package to CoCoA-5                 | 22 Jan 2024 10:37 | 10 | Anna Maria Bigatti |
| 388 | CoCoA-5.?.? | New         | High   | port optimized resolutions to CoCoA-5                            | 02 Jul 2014 16:13 | 0  | Anna Maria Bigatti |
| 412 | CoCoA-5.?.? | In Progress | Normal | intersection (all lower case)                                    | 28 Jul 2014 17:41 | 20 | Anna Maria Bigatti |
| 454 | CoCoA-5.?.? | New         | Normal | interpolate  | 04 Apr 2014 16:24 | 0  | John Abbott        |
| 487 | CoCoA-5.?.? | New         | Normal | ScalarProduct accepts MatrixRow?                                 | 18 Jun 2019 15:22 | 0  |                    |
| 501 | CoCoA-5.?.? | New         | Normal | Toric: resurrect function TestSet (and find better name for it?) | 09 Apr 2014 15:53 | 0  | Anna Maria Bigatti |
| 512 | CoCoA-5.?.? | New         | Normal | Resurrect MakeCheck()  | 28 Jul 2014 16:20 | 0  | Anna Maria Bigatti |
| 614 | CoCoA-5.?.? | In Progress | Normal | Add functions based on MayerVietorisTree                         | 04 Sep 2014 14:05 | 10 | Anna Maria Bigatti |
| 702 | CoCoA-5.?.? | New         | Normal | Add more operations for modules                                  | 15 May 2015 09:05 | 0  | Anna Maria Bigatti |
| 960 | CoCoA-5.?.? | New         | Normal | New function: IdealAndSeparatorsOfPoints                         | 02 Nov 2016 18:06 | 0  |                    |

| #                                     | Target version | Status      | Priority | Subject   | Updated           | % Done | Assignee           |
|---------------------------------------|----------------|-------------|----------|---|-------------------|--------|--------------------|
| 977                                   | CoCoA-5.4.2    | In Progress | Normal   | "universal denominator" (related with GroebnerFanIdeals)      | 03 Feb 2022 19:11 | 20     |                    |
| 1246                                  | CoCoA-5.4.4    | Feedback    | Urgent   | Revive old CoCoA4 package called "cocoa5.cpkg"                | 14 Mar 2023 11:58 | 90     | Anna Maria Bigatti |
| 1415                                  | CoCoA-5.4.2    | In Progress | Normal   | thmproving package  | 13 Jun 2022 15:31 | 60     | Anna Maria Bigatti |
| 1564                                  | CoCoA-5.4.2    | New         | Normal   | Geometrical theorem proving package                           | 19 Jan 2021 09:20 | 0      |                    |
| <b>CoCoA-4 function: obsolete (2)</b> |                |             |          |   |                   |        |                    |
| 1568                                  | CoCoA-5.4.2    | In Progress | High     | RMap and image: obsolescent?                                  | 17 Oct 2022 14:04 | 40     | Anna Maria Bigatti |
| 1626                                  | CoCoA-5.4.2    | Feedback    | Normal   | NewMat: should be obsolescent?                                | 19 Jan 2024 18:11 | 90     | John Abbott        |
| <b>CoCoA-5 function: new (32)</b>     |                |             |          |   |                   |        |                    |
| 216                                   | CoCoA-5.4.2    | In Progress | Normal   | Janet Bases: port function into CoCoA-5                       | 05 Nov 2021 16:12 | 20     |                    |
| 235                                   | CoCoA-5.?.?    | New         | Normal   | Add LucasTest to cocoa5?                                      | 04 Apr 2014 16:38 | 0      |                    |
| 242                                   | CoCoA-5.4.2    | In Progress | Normal   | CoCoA-5 Projects for students (e.g. crediti F and tesi)       | 21 Oct 2022 15:53 | 10     |                    |
| 274                                   | CoCoA-5.?.?    | In Progress | Normal   | InputForm for output readable as input                        | 04 Apr 2014 16:43 | 10     | Anna Maria Bigatti |
| 451                                   | CoCoA-5.?.?    | In Progress | Normal   | Port function NewSymbol/NewSymbols to CoCoA-5                 | 09 Nov 2015 15:29 | 10     |                    |
| 483                                   | CoCoA-5.?.?    | New         | Normal   | Unique copies of rings in CoCoA-5                             | 04 Apr 2014 16:42 | 0      |                    |
| 492                                   | CoCoA-5.?.?    | New         | Normal   | New C5 fn for adjusting the warning level                     | 22 Jul 2014 12:38 | 0      |                    |
| 504                                   | CoCoA-5.?.?    | In Progress | Normal   | New operators: += -= *= /=                                    | 25 Oct 2019 11:55 | 20     | John Abbott        |
| 578                                   | CoCoA-5.4.2    | In Progress | Normal   | Gaussian Elimination  | 15 May 2020 10:26 | 10     |                    |
| 579                                   | CoCoA-5.4.2    | In Progress | Normal   | Prototype package for Linear Commutative Algebra              | 15 May 2020 10:27 | 10     | Elisa Palezzato    |
| 626                                   | CoCoA-5.?.?    | New         | Normal   | Output Betti numbers  | 17 Sep 2014 13:11 | 0      |                    |
| 731                                   | CoCoA-5.?.?    | In Progress | Normal   | Primary Decomposition in CoCoA-5                              | 02 Oct 2017 13:30 | 10     |                    |
| 737                                   | CoCoA-5.?.?    | In Progress | Low      | Elementary transcendental functions (sin, cos, tan, log, exp) | 20 Mar 2017 09:00 | 50     |                    |
| 753                                   | CoCoA-5.?.?    | New         | Normal   | New function: LeastDegPolynomial (LDP)                        | 30 Jul 2015 17:29 | 0      |                    |
| 964                                   | CoCoA-5.?.?    | New         | Normal   | New function: MakeMultiset?                                   | 25 Jul 2018 15:35 | 0      | Anna Maria Bigatti |
| 980                                   | CoCoA-5.?.?    | In Progress | Normal   | CoeffSize: function to measure the size of coeffs in a poly   | 28 Nov 2023 22:29 | 20     |                    |
| 993                                   | CoCoA-5.?.?    | In Progress | Normal   | New function: RingQQi()? extension of QQ with imaginary unit  | 13 Nov 2017 15:05 | 0      |                    |
| 1107                                  | CoCoA-5.?.?    | New         | Normal   | CoCoA Online: install (using InteractiveShell)                | 16 Oct 2017 16:54 | 10     | Anna Maria Bigatti |
| 1153                                  | CoCoA-5.?.?    | New         | Normal   | New function: gin for algebraic extensions                    | 25 Jul 2018 15:36 | 0      | Anna Maria Bigatti |

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|------|----------------|-------------|----------|--|-------------------|--------|--------------------|
| 1285 | CoCoA-5.?.?    | New         | Normal   | New Fn: make a homogeneous list of ringelem  | 23 May 2019 11:53 | 0      |                    |
| 1305 | CoCoA-5.?.?    | New         | Normal   | Create a directory   | 02 Sep 2019 16:31 | 10     |                    |
| 1372 | CoCoA-5.4.2    | In Progress | Normal   | New function: find ?   | 04 Nov 2021 23:01 | 10     | Anna Maria Bigatti |
| 1469 | CoCoA-5.4.2    | New         | Normal   | Get indexed indets from a polyring   | 19 Jan 2021 12:39 | 0      |                    |
| 1476 | CoCoA-5.4.2    | New         | Normal   | Lin alg with polys   | 06 Aug 2020 15:03 | 0      |                    |
| 1535 | CoCoA-5.4.2    | In Progress | Normal   | New functions: argmin, argmax  | 26 Nov 2020 15:52 | 10     |                    |
| 1541 | CoCoA-5.4.2    | New         | Normal   | foreach with ref to list entry?  | 15 Jan 2024 19:39 | 0      |                    |
| 1549 | CoCoA-5.4.2    | In Progress | Normal   | Add sagbi package  | 18 Feb 2022 16:18 | 10     | Anna Maria Bigatti |
| 1596 | CoCoA-5.4.4    | Resolved    | Normal   | Add CoCoA5 function NmzHilbertBasisKer   | 14 Mar 2023 14:59 | 80     | Anna Maria Bigatti |
| 1644 | CoCoA-5.4.2    | In Progress | Normal   | Allow user to choose whether to print finite field elems as symm residues or non-neg residue | 03 Feb 2022 19:15 | 10     |                    |
| 1659 | CoCoA-5.4.2    | New         | Normal   | Jordan Normal Form?  | 07 Feb 2022 17:57 | 0      |                    |
| 1732 | CoCoA-5.4.4    | New         | Normal   | EvalPolyAtMat  | 28 Mar 2023 16:35 | 0      |                    |
| 1806 | CoCoA-5.4.4    | New         | Normal   | New function ModuleElems? (like RingElems(RING, STRING))                                     | 26 Mar 2024 13:44 | 0      |                    |

### EmacsUI (19)

|      |             |             |        |  |                   |    |                    |
|------|-------------|-------------|--------|--|-------------------|----|--------------------|
| 148  | CoCoA-5.?.? | In Progress | Normal | C-c C-p in emacs goes to wrong line  | 06 Oct 2022 20:15 | 20 |                    |
| 424  | CoCoA-5.?.? | In Progress | Low    | Emacs UI: Name of emacs init file  | 22 Jul 2014 11:21 | 10 | Anna Maria Bigatti |
| 434  | CoCoA-5.?.? | New         | Normal | Emacs UI: very slow when input file is big (with long lines)                   | 09 Apr 2014 15:52 | 0  |                    |
| 448  | CoCoA-5.4.2 | New         | Low    | EmacsUI Source/SourceRegion produce warning on Microsoft Windows 7 Ultimate    | 03 Feb 2022 19:51 | 0  |                    |
| 468  | CoCoA-5.?.? | New         | Low    | Emacs UI: indentation is wrong after ?keyword                                  | 17 Apr 2014 18:47 | 0  |                    |
| 469  | CoCoA-5.4.4 | Resolved    | Low    | Emacs UI: keywords in multiline comments                                       | 15 Jan 2024 19:49 | 20 |                    |
| 653  | CoCoA-5.?.? | New         | Low    | Emacs UI: use "warning colour" for an unmatched */                             | 04 Dec 2014 15:39 | 0  |                    |
| 660  | CoCoA-5.?.? | New         | Low    | Emacs UI: endfunc does not indent the line                                     | 04 Mar 2020 22:06 | 0  |                    |
| 663  | CoCoA-5.?.? | New         | Low    | Emacs UI: C-c C-\ copies line cursor is on                                     | 04 Feb 2015 13:19 | 0  |                    |
| 671  | CoCoA-5.?.? | New         | Low    | Emacs UI: swapped splitting  | 09 Mar 2015 13:49 | 0  | Anna Maria Bigatti |
| 727  | CoCoA-5.4.4 | In Progress | Low    | Emacs UI: send-file (C-c C-f) should check if buffer and file are synchronized | 05 May 2024 18:54 | 10 |                    |
| 772  | CoCoA-5.?.? | In Progress | Low    | Emacs UI: send-region and send-line make sense inside a cpkg5 file?            | 08 Sep 2015 12:49 | 20 |                    |
| 985  | CoCoA-5.4.2 | New         | Normal | Microsoft (Windows 10, maybe other versions): more help for installation       | 16 Feb 2022 20:26 | 10 | Anna Maria Bigatti |
| 1076 | CoCoA-5.?.? | New         | Low    | EmacsUI: interrupt copies line cursor is on to bottom then interrupts          | 12 Jun 2017 18:27 | 0  |                    |

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|---------------------------------|----------------|-------------|----------|--|-------------------|--------|--------------------|
| 1363                            | CoCoA-5.4.4    | In Progress | Normal   | Emacs UI: slow with long lines   | 15 Jan 2024 19:32 | 10     |                    |
| 1432                            | CoCoA-5.4.2    | New         | Normal   | Emacs UI: cocoa5-shell-check-process vs. process-status                          | 05 Nov 2021 16:32 | 0      |                    |
| 1486                            | CoCoA-5.4.2    | In Progress | Low      | Emacs UI: indentation in a package   | 12 Nov 2021 11:19 | 10     |                    |
| 1551                            | CoCoA-5.4.2    | New         | Low      | Emacs: avoid making buffer visible in 2 "windows"?                               | 19 Apr 2021 14:11 | 0      |                    |
| 1623                            | CoCoA-5.4.2    | Feedback    | Low      | EmacsUI: annoying colours  | 19 Jan 2024 16:50 | 90     | Anna Maria Bigatti |
| <b>enhancing/improving (68)</b> |                |             |          |  |                   |        |                    |
| 600                             | CoCoA-5.?.?    | New         | Normal   | efficient subalgebras  | 30 Jul 2014 17:29 | 0      | Anna Maria Bigatti |
| 646                             | CoCoA-5.?.?    | New         | Normal   | Unique copies of free modules?   | 10 Nov 2014 16:42 | 0      |                    |
| 655                             | CoCoA-5.?.?    | New         | Normal   | MakeSet can be very slow   | 20 Jan 2015 17:12 | 0      |                    |
| 656                             | CoCoA-5.?.?    | New         | Normal   | eval: in which ring should the result be?  | 20 Jan 2015 20:25 | 0      |                    |
| 657                             | CoCoA-5.?.?    | New         | Low      | use command, ring syntax, RingOf   | 20 Jan 2015 20:32 | 0      |                    |
| 659                             | CoCoA-5.?.?    | New         | Low      | Ring ID: separate index values for "system created rings"?                       | 23 Jan 2015 14:11 | 0      |                    |
| 716                             | CoCoA-5.4.2    | In Progress | Low      | NotBuiltin.cpkg5: indent for MODULE  | 06 Oct 2022 20:00 | 10     |                    |
| 723                             | CoCoA-5.4.2    | New         | Normal   | Referring to indets with multiple indices from a polyring                        | 12 Feb 2021 12:16 | 0      |                    |
| 857                             | CoCoA-5.?.?    | New         | Low      | floor, ceil, and NearestInt for RingElem in CoCoA-5?                             | 21 Feb 2019 09:17 | 0      |                    |
| 862                             | CoCoA-5.?.?    | New         | Normal   | append has bad complexity  | 05 Apr 2016 13:40 | 0      |                    |
| 865                             | CoCoA-5.4.2    | New         | Normal   | Implicit: make easier to use with rational functions                             | 03 Feb 2022 19:20 | 0      | Anna Maria Bigatti |
| 875                             | CoCoA-5.?.?    | In Progress | Normal   | Interpreter is too slow reading a big polynomial                                 | 20 Oct 2020 18:05 | 10     |                    |
| 876                             | CoCoA-5.?.?    | New         | Normal   | subst: allowed also for indets in the coeff ring                                 | 07 May 2016 13:59 | 0      |                    |
| 879                             | CoCoA-5.?.?    | New         | Normal   | LOGAR: make CoCoA-5 easier to use  | 09 May 2016 15:30 | 0      |                    |
| 888                             | CoCoA-5.?.?    | New         | Normal   | Escaped newline to allow a long line to be split into several "physical lines"   | 07 Jun 2016 00:26 | 0      |                    |
| 916                             | CoCoA-5.?.?    | New         | Normal   | use command: unhelpful error if you use := instead of ::=                        | 20 Oct 2020 17:50 | 0      |                    |
| 917                             | CoCoA-5.?.?    | New         | Normal   | CallOnGroebnerFanIdeals: better to use an iterator (or a "stream")               | 26 Nov 2016 17:46 | 0      |                    |
| 941                             | CoCoA-5.?.?    | New         | Normal   | Improve coverage of CoCoA-5 tests  | 10 Oct 2016 21:09 | 0      |                    |
| 984                             | CoCoA-5.?.?    | New         | Normal   | GroebnerFanIdeals: order matrices sometimes have "large" entries                 | 22 Nov 2021 20:19 | 0      |                    |
| 1003                            | CoCoA-5.?.?    | In Progress | Normal   | New syntax for creating poly rings?  | 27 Jan 2017 15:54 | 10     |                    |
| 1025                            | CoCoA-5.?.?    | In Progress | Normal   | Example of slow LEX GBasis computation   | 15 Nov 2017 14:57 | 10     |                    |
| 1034                            | CoCoA-5.?.?    | New         | Low      | Improve error message when args to (infix operator) IsIn have incompatible types | 17 Mar 2017 13:19 | 0      |                    |
| 1041                            | CoCoA-5.4.2    | In Progress | Normal   | Separators for elements of a list  | 04 Jan 2024 10:14 | 10     |                    |
| 1068                            | CoCoA-5.?.?    | In Progress | Normal   | PolyRing constructor: NewOrdvArith computed twice                                | 21 Mar 2024 11:55 | 10     |                    |
| 1071                            | CoCoA-5.4.2    | In Progress | Normal   | LinKerBasis is user-unfriendly   | 03 Feb 2022 19:54 | 10     |                    |

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| 1104 | CoCoA-5.4.2    | In Progress | Normal   | Eigenvectors: inconsistent return type                                | 03 Feb 2022 19:20 | 10     | John Abbott        |
| 1116 | CoCoA-5.?.?    | New         | Normal   | Port RowMat, ColMat, MatByRows,... to CoCoA-5                         | 01 Oct 2019 14:40 | 0      | Anna Maria Bigatti |
| 1129 | CoCoA-5.?.?    | In Progress | Normal   | Generic Timeout for CoCoA-5?  | 28 Nov 2017 18:06 | 10     |                    |
| 1138 | CoCoA-5.?.?    | New         | Normal   | Latex: matrix   | 11 Dec 2017 16:45 | 0      | Anna Maria Bigatti |
| 1141 | CoCoA-5.4.2    | New         | Low      | IsInRadical: for monomial ideals                                      | 15 May 2020 10:53 | 0      |                    |
| 1204 | CoCoA-5.4.2    | New         | Normal   | MinPoly for matrix: fix in cocoalib and export to cocoa5              | 03 Feb 2022 19:21 | 0      |                    |
| 1237 | CoCoA-5.4.2    | New         | Normal   | ker: for PolyAlgHom from QQ[x,y,z] to QQ(t)                           | 10 Jun 2021 18:06 | 0      |                    |
| 1244 | CoCoA-5.4.2    | In Progress | Normal   | MSatLinSolve: req minor improvements                                  | 03 Feb 2022 20:14 | 10     |                    |
| 1262 | CoCoA-5.4.2    | In Progress | Normal   | Split BuiltinFunctions-CoCoALib.C into smaller files                  | 03 Feb 2022 19:53 | 30     |                    |
| 1271 | CoCoA-5.?.?    | In Progress | Normal   | Allow Interruption of printing?                                       | 17 Apr 2019 10:17 | 10     |                    |
| 1275 | CoCoA-5.?.?    | New         | Low      | incr and decr are slow  | 29 Apr 2019 17:53 | 0      |                    |
| 1291 | CoCoA-5.?.?    | New         | Low      | LinearSimplify: sometimes not optimal                                 | 27 May 2019 21:17 | 0      |                    |
| 1296 | CoCoA-5.?.?    | In Progress | Normal   | Matrixrow-functions   | 18 Jun 2019 15:15 | 10     |                    |
| 1313 | CoCoA-5.4.2    | New         | Normal   | Automatic conversion from RINGELEM to INT                             | 03 Feb 2022 19:21 | 0      |                    |
| 1403 |                | In Progress | Normal   | RingID: remove this function?   | 24 Jan 2020 21:20 | 10     |                    |
| 1425 | CoCoA-5.4.2    | New         | Normal   | MakeTerm: implement in C++  | 03 Feb 2022 19:22 | 0      |                    |
| 1429 | CoCoA-5.4.2    | New         | Normal   | Stack overflow reading long list (SEGV)                               | 19 Apr 2021 14:14 | 0      |                    |
| 1475 | CoCoA-5.4.2    | New         | Normal   | HilbertSeries: make into proper rational function                     | 03 Feb 2022 19:54 | 0      |                    |
| 1503 | CoCoA-5.4.2    | New         | Normal   | More flexible ring creation syntax (after use or ::=)                 | 08 Oct 2020 14:16 | 0      |                    |
| 1508 | CoCoA-5.4.2    | In Progress | Normal   | Initial ring  | 10 May 2024 10:50 | 50     |                    |
| 1519 | CoCoA-5.4.2    | New         | Normal   | Interpreter fn Value::from can use std::move?                         | 03 Feb 2022 19:54 | 0      |                    |
| 1533 | CoCoA-5.4.2    | In Progress | Low      | RingElem and IndetSymbols not compatible                              | 06 Nov 2020 13:56 | 10     |                    |
| 1545 | CoCoA-5.4.2    | New         | Low      | CoeffOfTerm: in CoCoALibSupplement                                    | 11 Dec 2020 12:30 | 20     |                    |
| 1556 | CoCoA-5.4.2    | New         | Normal   | DivAlg slower than NR   | 08 Jan 2021 11:20 | 10     | Anna Maria Bigatti |
| 1560 | CoCoA-5.4.2    | New         | Normal   | elim for modules  | 03 Feb 2022 19:55 | 0      |                    |
| 1578 | CoCoA-5.4.4    | New         | Normal   | SLUG: RationalSolve slow and stupid                                   | 15 Jan 2024 19:27 | 0      |                    |
| 1581 | CoCoA-5.4.2    | New         | Normal   | Slow sqfr: rad(f)   | 12 Oct 2021 09:22 | 0      |                    |
| 1583 | CoCoA-5.4.2    | New         | Normal   | New fn ElapsedTimeFrom?   | 18 Mar 2024 21:27 | 0      |                    |
| 1622 | CoCoA-5.4.4    | New         | Normal   | BuiltinOneLiners -- less precise location in error messages           | 18 Mar 2024 21:16 | 0      |                    |
| 1624 | CoCoA-5.4.4    | New         | Normal   | CantStop playing CantStop   | 15 Jan 2024 19:55 | 0      |                    |
| 1631 | CoCoA-5.4.2    | New         | Normal   | Use filesystem::path instead of string (packageDir, CoCoAManFileName) | 14 Jan 2022 10:27 | 0      |                    |

| #                        | Target version | Status      | Priority | Subject   | Updated           | % Done | Assignee           |
|--------------------------|----------------|-------------|----------|---|-------------------|--------|--------------------|
| 1634                     | CoCoA-5.4.4    | In Progress | Normal   | Unexpected or unhelpful error using GroebnerFanIdeals                         | 05 May 2024 19:12 | 10     |                    |
| 1638                     | CoCoA-5.4.2    | New         | Normal   | MinSubsetOfGens sometimes very slow   | 06 Dec 2021 20:37 | 0      |                    |
| 1671                     | CoCoA-5.4.2    | New         | Normal   | Refactor C++ impl in OnlineHelp   | 11 Mar 2024 07:56 | 0      |                    |
| 1681                     | CoCoA-5.4.2    | In Progress | Normal   | Should Starting be case-insensitive?  | 22 Dec 2023 11:27 | 20     | Anna Maria Bigatti |
| 1722                     | CoCoA-5.?.?    | In Progress | Low      | Daft slug   | 27 Feb 2023 12:57 | 20     |                    |
| 1728                     | CoCoA-5.4.4    | In Progress | Normal   | Refine Poset impl & doc   | 21 Mar 2023 03:33 | 10     |                    |
| 1731                     | CoCoA-5.4.4    | In Progress | Normal   | Verbosity level in CoCoA5   | 11 May 2023 07:34 | 70     | Anna Maria Bigatti |
| 1747                     | CoCoA-5.4.2    | New         | Normal   | NewPolyRing with indices -- better interface?                                 | 29 Jun 2023 18:09 | 0      |                    |
| 1752                     | CoCoA-5.4.4    | New         | Normal   | Make it easy to run the tests in a public/distrib version                     | 06 Jul 2023 12:14 | 0      |                    |
| 1762                     | CoCoA-5.4.4    | New         | Normal   | CoCoA web site "analytics"  | 21 Aug 2023 18:20 | 10     | Anna Maria Bigatti |
| 1772                     | CoCoA-5.4.2    | New         | Normal   | Continued fraction: arg type RAT or RAT/INT?                                  | 28 Nov 2023 22:17 | 0      |                    |
| 1795                     | CoCoA-5.4.2    | Feedback    | Normal   | Makefile problem: needlessly relinks CoCoAInterpreter                         | 18 Mar 2024 20:51 | 90     | John Abbott        |
| <b>External Libs (3)</b> |                |             |          |   |                   |        |                    |
| 709                      | CoCoA-5.4.2    | In Progress | High     | Speed of some Normaliz calls (NmzComputation)                                 | 03 Feb 2022 19:23 | 10     |                    |
| 712                      | CoCoA-5.?.?    | In Progress | Normal   | External Libs: missing dependencies in Makefiles                              | 01 Oct 2019 14:31 | 10     | John Abbott        |
| 720                      | CoCoA-5.?.?    | New         | Normal   | External libs: specifying I/O streams (initialization?)                       | 22 May 2015 14:14 | 0      |                    |
| <b>GUI (12)</b>          |                |             |          |   |                   |        |                    |
| 38                       | CoCoA-5.?.?    | New         | Normal   | GUI: open file "with C5"  | 09 Apr 2014 15:00 | 0      |                    |
| 133                      | CoCoA-5.?.?    | New         | Normal   | Qt GUI: Make better distinction between input and output in the output window | 12 Mar 2021 09:39 | 0      |                    |
| 136                      | CoCoA-5.?.?    | New         | Normal   | GUI: Add an edit menu to the top bar (CoCoA GUI on MacOS)                     | 02 Jul 2014 16:56 | 0      |                    |
| 198                      | CoCoA-5.?.?    | New         | Normal   | Appunti per (eventuale) tesi triennale Informatica: CoCoA GUI                 | 30 Sep 2022 19:05 | 0      |                    |
| 276                      | CoCoA-5.?.?    | New         | Normal   | TeXmacs interface   | 09 Apr 2014 15:01 | 0      |                    |
| 299                      | CoCoA-5.?.?    | New         | Low      | GUI: message "running.." (close to output window?)                            | 15 May 2020 10:56 | 0      |                    |
| 527                      | CoCoA-5.?.?    | New         | Normal   | GUI: better name for the graphical interface?                                 | 27 Jul 2015 19:25 | 0      |                    |
| 611                      | CoCoA-5.?.?    | New         | Low      | GUI: quitting provokes Imminent Disaster                                      | 28 Feb 2024 21:24 | 0      |                    |
| 1093                     | CoCoA-5.?.?    | In Progress | Low      | GUI: bugs and slugs   | 18 Aug 2022 15:36 | 10     | John Abbott        |
| 1293                     | CoCoA-5.4.2    | Resolved    | Low      | Vim Plugin for CoCoA  | 24 Sep 2021 21:47 | 70     |                    |
| 1393                     | CoCoA-5.4.2    | Feedback    | Normal   | GUI with Qt5  | 30 Nov 2022 22:07 | 90     | Ulrich von der Ohe |
| 1713                     | CoCoA-5.?.?    | In Progress | Low      | Windows: Qt-Gui does not link correctly                                       | 25 Feb 2024 20:42 | 50     | Nico Mexis         |

### Incomplete function (5)

11 May 2024

| #    | Target version | Status      | Priority | Subject  | Updated           | % Done | Assignee           |
|------|----------------|-------------|----------|--|-------------------|--------|--------------------|
| 96   | CoCoA-5.?.?    | New         | Normal   | sort is too slow                                 | 28 May 2021 20:40 | 0      | John Abbott        |
| 100  | CoCoA-5.?.?    | New         | Normal   | BringIn should map only the indets in its arg    | 26 Sep 2022 20:25 | 0      |                    |
| 106  | CoCoA-5.?.?    | In Progress | Normal   | l:f (IDEAL and RINGELEM) -- operator colon       | 02 Sep 2014 11:12 | 10     | Anna Maria Bigatti |
| 920  | CoCoA-5.?.?    | New         | Normal   | Empty matrix: warning, error, or empty matrix?   | 08 Sep 2016 11:45 | 10     |                    |
| 1805 | CoCoA-5.4.4    | New         | Normal   | Add CoCoA-5 syntax: syz(<F,> list of ModuleElem) | 26 Mar 2024 12:16 | 0      | Anna Maria Bigatti |

### Manual/documentation (35)

|      |             |             |        |  |                   |    |                    |
|------|-------------|-------------|--------|--|-------------------|----|--------------------|
| 13   | CoCoA-5.?.? | New         | Normal | (short) manual for emacs interface   | 12 Oct 2016 16:56 | 0  |                    |
| 177  | CoCoA-5.4.4 | In Progress | Normal | CoCoAManual: General part of the documentation is obsolete: update? discard? | 10 Mar 2023 17:02 | 70 | Anna Maria Bigatti |
| 181  | CoCoA-5.4.2 | New         | Low    | Functions throwing error even though (trivially) defined                     | 04 Nov 2021 23:09 | 10 |                    |
| 296  | CoCoA-5.?.? | In Progress | Normal | Documentation for Parser/Interpreter   | 09 Apr 2014 17:22 | 10 | Anna Maria Bigatti |
| 322  | CoCoA-5.4.2 | In Progress | High   | Installation instructions (on website)                                       | 13 Jun 2022 15:32 | 60 | Anna Maria Bigatti |
| 323  | CoCoA-5.?.? | New         | Normal | system variables   | 04 Apr 2014 17:06 | 0  |                    |
| 557  | CoCoA-5.4.2 | New         | Normal | CoCoAManual: improve part on input/output                                    | 03 Feb 2022 20:15 | 0  | Anna Maria Bigatti |
| 677  | CoCoA-5.?.? | New         | Normal | Credits to CoCoA-5 contributors  | 15 Nov 2019 15:28 | 0  |                    |
| 912  | CoCoA-5.4.2 | In Progress | Urgent | Add TUTORIALS to online manual   | 17 Oct 2022 14:02 | 80 |                    |
| 943  | CoCoA-5.?.? | In Progress | Normal | Managing credits   | 16 May 2017 14:49 | 10 |                    |
| 1031 | CoCoA-5.?.? | New         | Normal | ScalarProduct: exact defn and manual page                                    | 17 Mar 2017 11:03 | 0  |                    |
| 1054 | CoCoA-5.?.? | New         | Normal | CoCoAManual: improved search, or improved selection of "see also" pages      | 28 Apr 2017 11:42 | 0  |                    |
| 1077 | CoCoA-5.4.4 | Resolved    | Normal | Manual: remove old stuff about "devices"                                     | 14 Mar 2023 22:02 | 70 | John Abbott        |
| 1079 | CoCoA-5.4.2 | In Progress | Normal | CoCoAManual: AffHilbertFn accepts also ideal (correct?)                      | 08 May 2023 20:44 | 20 |                    |
| 1241 | CoCoA-5.4.2 | New         | Normal | GDPR: website, mailing list  | 05 Feb 2022 20:34 | 0  |                    |
| 1245 | CoCoA-5.4.2 | New         | Normal | Online manual entry for RingElem needs to be improved                        | 03 Feb 2022 20:15 | 0  |                    |
| 1252 | CoCoA-5.4.2 | New         | Normal | ShapeLemma: no manual entry  | 03 Feb 2022 20:16 | 0  |                    |
| 1314 | CoCoA-5.?.? | In Progress | Normal | Emacs UI: open manual pages in a separate frame?                             | 27 Sep 2019 17:23 | 10 |                    |
| 1320 | CoCoA-5.4.2 | New         | Normal | CoCoA-5 manual: incorrect empty line in syntax box (in PDF file)             | 04 Nov 2021 23:16 | 0  |                    |
| 1350 | CoCoA-5.4.2 | New         | Normal | CoCoA manual: entry for operators, shortcuts                                 | 05 Feb 2022 20:35 | 0  |                    |
| 1365 | CoCoA-5.4.2 | New         | Normal | Package Edgeldeal not documented   | 03 Feb 2022 20:16 | 0  |                    |
| 1418 | CoCoA-5.4.2 | New         | Normal | Manual entry for NewPolyRing   | 03 Feb 2022 20:16 | 0  |                    |
| 1430 | CoCoA-5.4.2 | New         | Normal | HTML manual: search using keywords?  | 04 Nov 2021 23:17 | 0  |                    |

| #    | Target version | Status      | Priority  | Subject   | Updated           | % Done | Assignee           |
|------|----------------|-------------|-----------|---|-------------------|--------|--------------------|
| 1454 | CoCoA-5.4.2    | New         | Normal    | Filenames in release CoCoAManual/html containing [obsolete] | 03 Feb 2022 20:17 | 0      | Anna Maria Bigatti |
| 1480 | CoCoA-5.4.2    | New         | Normal    | Documentation for making ring with parameters               | 03 Feb 2022 20:18 | 0      |                    |
| 1534 | CoCoA-5.4.2    | In Progress | Immediate | Install CoCoA-5 on MacOS-10.15+                             | 07 Oct 2022 14:35 | 50     |                    |
| 1548 | CoCoA-5.4.2    | New         | Normal    | Man page for UniversalGBasis                                | 03 Feb 2022 20:18 | 0      | Anna Maria Bigatti |
| 1621 | CoCoA-5.4.2    | New         | Normal    | Doc for the various BuiltIn files                           | 18 Oct 2021 11:26 | 0      |                    |
| 1636 | CoCoA-5.4.2    | In Progress | Normal    | Missing/Incomplete manual entries                           | 30 Nov 2023 17:21 | 10     |                    |
| 1663 | CoCoA-5.4.2    | New         | Normal    | GCDList not documented                                      | 31 May 2022 09:55 | 0      |                    |
| 1686 | CoCoA-5.4.2    | New         | Normal    | Manual entry for random (see also)                          | 09 Jun 2022 20:49 | 0      |                    |
| 1707 | CoCoA-5.?.?    | New         | Normal    | User forum?   | 01 Nov 2022 22:02 | 0      |                    |
| 1741 | CoCoA-5.4.2    | In Progress | High      | Documentation/Manual for HilbertFn                          | 10 May 2023 20:49 | 20     |                    |
| 1765 | CoCoA-5.4.4    | New         | Normal    | Difference between seealso and keys?                        | 16 Oct 2023 20:02 | 0      |                    |
| 1776 |                | New         | Normal    | CoCoA-5 releases on redmine                                 | 12 Jan 2024 11:53 | 70     | Anna Maria Bigatti |

### Parser/Interpreter (25)

|     |             |             |        |   |                   |    |                    |
|-----|-------------|-------------|--------|---|-------------------|----|--------------------|
| 7   | CoCoA-5.4.2 | Resolved    | High   | Automatic mapping between (some) rings                                | 10 Mar 2023 17:08 | 80 | Anna Maria Bigatti |
| 31  | CoCoA-5.4.2 | In Progress | Normal | theValue makes copy   | 18 Feb 2022 16:42 | 60 | Anna Maria Bigatti |
| 95  | CoCoA-5.?.? | New         | Normal | Error/warning if fn-proc is neither fn nor proc?                      | 15 Jun 2016 14:13 | 0  |                    |
| 97  | CoCoA-5.4.2 | New         | Normal | OpenOFile   | 05 May 2024 20:44 | 0  |                    |
| 101 | CoCoA-5.?.? | New         | Normal | rethrow in Try .. UponError .. EndTry                                 | 23 Oct 2020 10:18 | 0  |                    |
| 183 | CoCoA-5.?.? | New         | Low    | Template for unaryMinus?  | 25 Jul 2018 17:15 | 0  |                    |
| 287 | CoCoA-5.?.? | New         | Normal | --fullCoCoALibError prints too much (Try/UponError)                   | 02 Sep 2016 13:54 | 10 | Anna Maria Bigatti |
| 290 | CoCoA-5.?.? | In Progress | Normal | Which functions are defined in CoCoALibSupplement?                    | 29 Mar 2019 19:23 | 20 | Anna Maria Bigatti |
| 363 | CoCoA-5.?.? | New         | Normal | Colon operator, 2nd arg   | 09 Apr 2014 15:07 | 0  |                    |
| 375 | CoCoA-5.?.? | New         | Normal | allow single function call in "use" : e.g. "Use NewFractionField(R);" | 02 Sep 2014 11:14 | 0  |                    |
| 435 | CoCoA-5.?.? | New         | Normal | Assignment to protected variable                                      | 04 Apr 2014 17:05 | 0  |                    |
| 486 | CoCoA-5.?.? | New         | Normal | Warning about variable hiding another -- too zealous                  | 01 Sep 2014 13:55 | 0  |                    |
| 597 | CoCoA-5.?.? | New         | Normal | Interpreter.C: remove calls to WrongTypeException                     | 02 Mar 2020 21:45 | 0  |                    |
| 669 | CoCoA-5.?.? | New         | Low    | NUL char in input terminates CoCoA-5                                  | 04 Mar 2020 21:28 | 0  |                    |
| 749 | CoCoA-5.?.? | New         | Normal | IsDefined does not follow reference to undefined optional param       | 31 Jul 2015 12:08 | 0  |                    |

| #                      | Target version | Status      | Priority | Subject   | Updated           | % Done | Assignee           |
|------------------------|----------------|-------------|----------|---|-------------------|--------|--------------------|
| 915                    | CoCoA-5.?.?    | New         | Low      | When is a semicolon needed to end a statement/command?          | 28 Feb 2024 21:27 | 0      |                    |
| 928                    | CoCoA-5.?.?    | New         | Low      | ciao, exit, quit can be used not only at top level              | 18 Oct 2021 11:08 | 0      |                    |
| 946                    | CoCoA-5.4.2    | Resolved    | Urgent   | Function "ideal" evaluates the argument twice                   | 23 Feb 2022 12:14 | 80     | Anna Maria Bigatti |
| 1234                   | CoCoA-5.?.?    | In Progress | Normal   | CoCoA should read unicode                                       | 01 Oct 2019 14:36 | 0      |                    |
| 1292                   | CoCoA-5.4.2    | New         | Normal   | Interpreter: fns which accept INT or RAT                        | 03 Feb 2022 19:33 | 0      |                    |
| 1435                   | CoCoA-5.4.4    | New         | Low      | Disable readline if input is redirected                         | 05 May 2024 19:03 | 0      |                    |
| 1440                   | CoCoA-5.4.2    | New         | Low      | Surprising parser error: INT+DOT+IDENTIFIER                     | 04 Nov 2021 23:10 | 0      |                    |
| 1544                   | CoCoA-5.4.2    | New         | Normal   | CoCoA coding conventions for parser/interpreter?                | 11 Dec 2020 12:01 | 10     |                    |
| 1650                   | CoCoA-5.4.2    | In Progress | Normal   | Potentially confusing prompt: waiting for semicolon             | 10 May 2024 10:33 | 70     |                    |
| 1759                   | CoCoA-5.4.4    | New         | Low      | Better error mesg for 1.2.3.4?                                  | 19 Mar 2024 20:05 | 0      |                    |
| <b>Portability (5)</b> |                |             |          |   |                   |        |                    |
| 83                     | CoCoA-5.4.2    | In Progress | Normal   | C++11 compatibility questions                                   | 03 Feb 2022 19:59 | 40     |                    |
| 629                    | CoCoA-5.?.?    | In Progress | Normal   | Windows-GUI: compilation with MinGW                             | 19 Mar 2024 22:21 | 20     | Anna Maria Bigatti |
| 1006                   | CoCoA-5.?.?    | In Progress | Normal   | External dependencies for building                              | 27 Oct 2021 13:13 | 10     |                    |
| 1146                   | CoCoA-5.4.2    | New         | Low      | Use Flatpak and/or Snap on Linux?                               | 06 Oct 2020 15:55 | 0      |                    |
| 1373                   | CoCoA-5.4.2    | In Progress | Normal   | GFan also for Microsoft?  | 17 Oct 2022 13:59 | 10     | Anna Maria Bigatti |
| <b>Release (6)</b>     |                |             |          |   |                   |        |                    |
| 1445                   | CoCoA-5.4.2    | New         | Normal   | Automatic way to produce statically linked CoCoAInterpreter     | 03 Feb 2022 19:38 | 0      |                    |
| 1453                   | CoCoA-5.4.2    | New         | Normal   | Use symbolic links for release files                            | 03 Feb 2022 19:39 | 0      |                    |
| 1474                   | CoCoA-5.4.2    | New         | High     | Website: link to JSAG?  | 16 Feb 2022 20:27 | 0      |                    |
| 1688                   | CoCoA-5.4.2    | In Progress | Normal   | Release CoCoA 5.4.2   | 14 Feb 2023 21:29 | 0      |                    |
| 1701                   | CoCoA-5.4.2    | In Progress | Normal   | Preliminary packages  | 18 Mar 2024 21:05 | 10     |                    |
| 1708                   | CoCoA-5.4.2    | New         | Normal   | Linux: just 1 executable, should be 2 (with & without readline) | 05 May 2024 19:15 | 0      |                    |
| <b>Renaming (1)</b>    |                |             |          |   |                   |        |                    |
| 1456                   | CoCoA-5.4.2    | New         | Normal   | IntersectList or IntersectionList                               | 15 Mar 2024 18:24 | 0      |                    |