



cppTango Version 10: Oh no! What have we done now?



9.3.7 (LTS), 9.5.0 (retired), 10.0.2 and beyond



Photo taken inside the very first SKA Mid dish. "Proof" that Tango Controls runs the show.

10:

- 10.0.0: Released on 2024-09-27
 - 10.0.1 a.k.a. 10.0.2: Released on 2025-02-13
 - 10.1.0 planned for June 2025
- 9.3.7 (LTS) released on 2024-11-28
- 9.3.x in maintenance mode
 - Critical bug fixes only
 - No backporting of new features
 - No new features

main	9.3-backports
Next: minor release cppTango 10.3.0 (after 10.1.0, TB can explain)	(9.3.x LTS branch)
<ul style="list-style-type: none">Requires C++17 (at least)Requires CMake 3.18	<ul style="list-style-type: none">Only requires C++98
Reserve the right to break API/ABI as required in this branch. However, we are conservative about breaking API.	Even <u>binary</u> compatibility with cppTango 9.3.x is guaranteed.
<p>Gitlab CI:</p> <ul style="list-style-type: none">Debian 11-13, 12-cross-32bitAlpineUbuntu 22.04 and 24.04LLVM (20)/GCC (15.1) (c++17/20/23)Clang-tidy, clang-analyzerSanitizers (ASAN, TSAN, UBSAN)MacOSX x86_64/aarch64MSVC 2022	<p>Gitlab CI:</p> <ul style="list-style-type: none">Debian 7 (c++=*), 8 (c++=*), 9 (c++=*) and 10 (c++=* and c++98) (frozen) *=distribution defaultAlpineGCC (8.3.0, frozen) <p>Appveyor: win32 and x64 for msvc9, msvc10, msvc12, msvc14 and msvc 15</p>

Adjusted cppTango release cycle:

- **Major releases (11.0.0, 12.0.0, ...)**
 - Define new features
 - Write RFCs
 - Implement new features
 - Release when done and not on a set date
- **Minor releases (10.x.0, 11.x.0, ...)**
 - Bugfix releases
 - Release every six months, regardless what has been fixed
- **Hotfix releases (10.x.y, 11.x.y, ...)**
 - Important bug fixes/regressions only
 - When required

Latest cppTango 9.3 LTS release:
9.3.7 (released 2024-11-28)

Remember: 9.3 LTS support ends 2027-10-02!



★ https://gitlab.com/tango-controls/cppTango/-/issues?label_name=Bug&milestone_title=9.3.7&state=all

- Setting alarm range for memorized attributes

★ Bug fixed in main but **not** backported in 9.3.7
(will not be fixed in 9.3.x):

- Potential crash at server init when a device server uses groups in a thread (#867)

Major improvements/changes when compared to 9.5:

- New DevInfo_6 structure
- Added Open Telemetry support
- New Alarm event

😞 Broken promise: Alarm hysteresis is not in Tango 10!
We make another promise: Coming in Tango 11. 🎉

The next cppTango planned release will be
cppTango 10.1.0

To be released in June 2025!

Highlights:

- No more `#include tango/tango.h` in cppTango. Minor nuisance for users that don't follow IWYU.
- Fixed deadlock on event system shutdown & make it less racy
- Added command to query event system stats (see talk from TI)
- More default initializations of pointers in event classes
- Improved signal handling to interfere less
- Ported more tests to catch2 and add more supporting infrastructure
- Fixed **all** known memory leaks
- Broke API/ABI: Recompilation fixes it
- (Fully asynchronous event subscription)

cppTango 11: planned for ~May 2026

Main features:

- Warning and alarm hysteresis support
- (Encryption support)
- (Multi-parameter commands)
- (DevDict)

Parenthesis indicate "not confirmed yet"

! Friday morning 08.00h: Roadmap session !

Fixed all known memory leaks

Code (12):

c98e92b9 (DServerClass::device_factory: Use std::unique_ptr to avoid memory leaks when init_device throws, 2025-05-08)

637465ad (DeviceClass::create_device_pipe: Fix memory leak on device restart, 2025-05-08)

05cf2578 (Telemetry: Fix memory leak on device server restart, 2025-05-01)

84187371 (Util::fill_attr_polling_buffer: Fix memory leak, 2025-05-02)

3b178a57 (detail::stringify_any: Fix memory leak, 2024-10-13)

65616c5c (DeviceData: Avoid leaking memory in the error case, 2024-10-07)

368220e2 (src/include/tango/client/eventconsumer.h: Fix memory leak, 2024-11-13)

9d1434ce (EventData::operator=: Fix memory leak, 2024-11-13)

20956dc2 (DeviceImpl::~DeviceImpl: Avoid memory leak before shutdown, 2024-10-09)

acdcd503 (FileDatabase: Fix memory leaks when deleting properties, 2024-10-10)

9c9a29dd (FileDatabase::DbGetProperty: Fix memory leak, 2024-10-10)

14fd40f2 (Attribute: change raw pointer value to std::variant<std::unique_ptr> attribute_value, 2025-04-17)

Tests:

3d038ff5 (AutoDeviceClass: Use std::unique_ptr to avoid memory leaks when init_device throws, 2025-05-08)

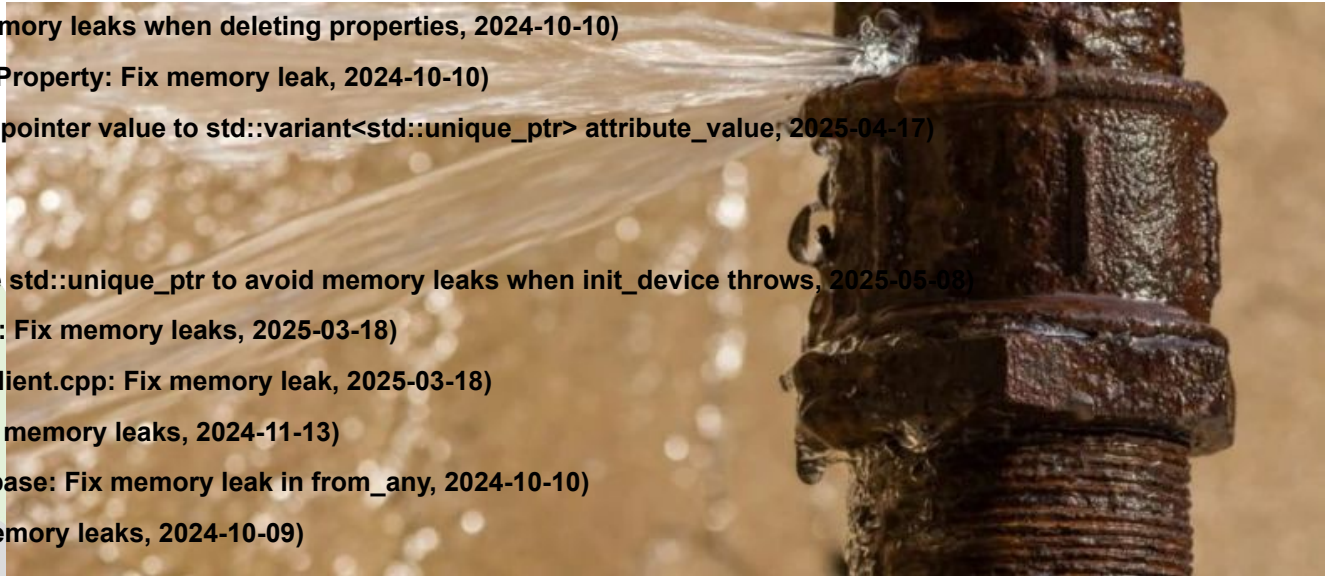
1c52fca7 (tests/write_attr_3.cpp: Fix memory leaks, 2025-03-18)

69f9c3ec (tests/ConfEventBugClient.cpp: Fix memory leak, 2025-03-18)

78238636 (tests: Fix some more memory leaks, 2024-11-13)

60fcd23c (tests/catch2_filedatabase: Fix memory leak in from_any, 2024-10-10)

9cd469b8 (tests: Fix obvious memory leaks, 2024-10-09)



Test cleanup challenge

From 17 tests in the 10.0.0 release we now have 35 in catch2.

So there are *only* 114 left to convert. With ~17 per 6 months we will be done in ~ 3.5 years!

Our general rule is that the old/cxx tests are not to be extended and all new tests must be in catch2.



Video recordings available on tango-controls YouTube channel:
<https://www.youtube.com/channel/UCezS9cMkektZNItYnPOAQvg>

The screenshot shows the Tango Controls YouTube channel page. The channel name is "tango-controls" with 71 subscribers. The page features a large "TANGO" logo with a green circular icon containing a stylized figure. Below the logo, there are tabs for HOME, VIDEOS, PLAYLISTS, CHANNELS, and ABOUT. The "VIDEOS" tab is selected, showing a list of uploads. The uploads include:

- Tango Kernel Webinar #5 - Taurus - Part 2 (33 views • 1 month ago)
- Tango Kernel Webinar #5 - Taurus - Bonus during break (18 views • 1 month ago)
- Tango Kernel Webinar #5 - Taurus - Part 1 (85 views • 1 month ago)
- Tango Kernel Webinar #4: PyTango (309 views • 11 months ago)
- Tango Kernel Webinar #3 - Tango events system - ... (66 views • 1 year ago)
- Tango Kernel Webinar #3 - Tango event system (117 views • 1 year ago)

The left sidebar shows the YouTube navigation menu with options like Home, Explore, Subscriptions, Library, and History. The bottom of the page has a "SIGN IN" button and a "SUBSCRIBE" button.

- Kernel
 - On 2nd and 4th Thursday of the month at 15:00h (CET/CEST)
 - Agenda and minutes available on Gitlab: [tango-kernel-followup](#)
 - Status of recent development (cppTango, JTango, pyTango, POGO, RFCs, ...)
 - Technical discussions
 - Define priorities
- cppTango
 - Every Thursday, 16:00h (CET/CEST)
 - Prioritising issues
 - MR discussion
 - Feature discussion and prioritisation

Meet the cppTango team



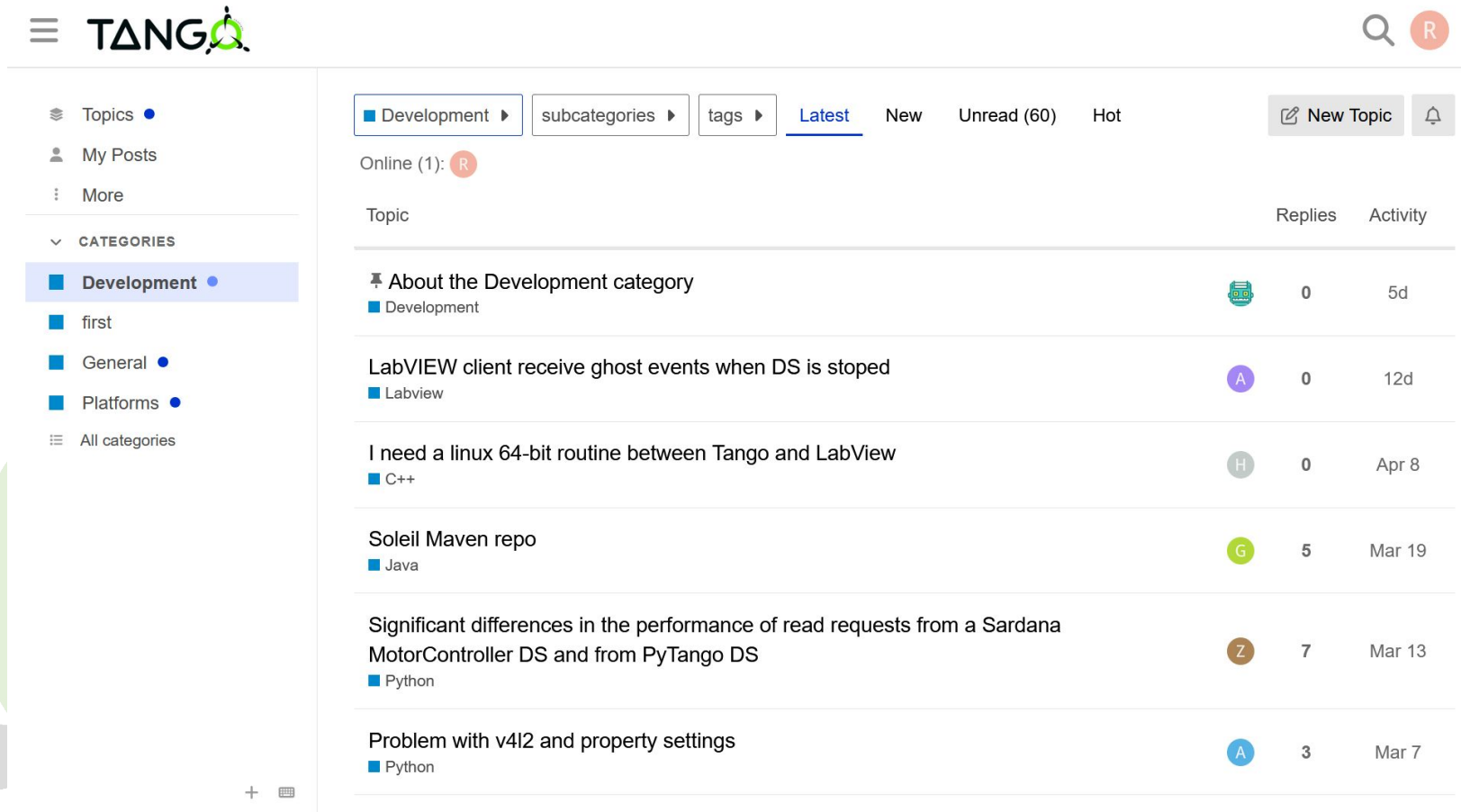
A random photo from our telecon.
Starting at top left: Thomas Braun
(byte physics e.K.), Thomas
Juerges (SKAO), Reynald
Bourtembourg (ESRF), Thomas
Ives (OSL), Damien Lacoste
(ESRF)

**Weekly meetings can
be fun!**

Please join us.

<https://www.tango-controls.org/community/forum>

Currently being migrated to Discourse by Webu company
Test site: <https://tango-wagtail.web.webu.coop/> - feedback welcome!



The screenshot shows the Tango-Controls Forum interface. On the left is a sidebar with a menu (hamburger icon), the logo 'TANGO', and navigation links: Topics, My Posts, and More. Below these are the categories: Development (selected), first, General, Platforms, and All categories. The main content area has a filter bar with 'Development' selected, and buttons for 'subcategories', 'tags', 'Latest' (selected), 'New', 'Unread (60)', and 'Hot'. There are also buttons for 'New Topic' and a notification bell. Below the filter bar, it says 'Online (1):' with a red circle icon. The main list of topics is as follows:

Topic	Replies	Activity
About the Development category Development	0	5d
LabVIEW client receive ghost events when DS is stoped Labview	0	12d
I need a linux 64-bit routine between Tango and LabView C++	0	Apr 8
Soleil Maven repo Java	5	Mar 19
Significant differences in the performance of read requests from a Sardana MotorController DS and from PyTango DS Python	7	Mar 13
Problem with v4I2 and property settings Python	3	Mar 7

We are now on Mattermost

Join us!

<https://mattermost.hzdr.de/tango-controls/channels/cppTango>



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"You know, we're just not reaching that guy."

We have started an FAQ for you!

It is in its infancy and we all together will add FAQs over time.

Please head over to:

<https://gitlab.com/groups/tango-controls/-/wikis/The-Tango-Controls-FAQ>



Thank you!

Any questions?

Acknowledgement (in alphabetic order):

Benjamin Bertrand, Damien Lacoste, Reynald Bourtembourg, Rodrigo Tobar, Sergi Rubio, Théo Rozier, Thomas Braun, Thomas Ives, Thomas Juerges, Yury Matveyev

and so many others for their contributions (MRs, bug reports, code reviews, comments, the whole lot)

<https://gitlab.com/tango-controls/cppTango/-/milestones>

<https://gitlab.com/tango-controls/cppTango/-/issues>

<https://gitlab.com/tango-controls/TangoSourceDistribution/-/issues>