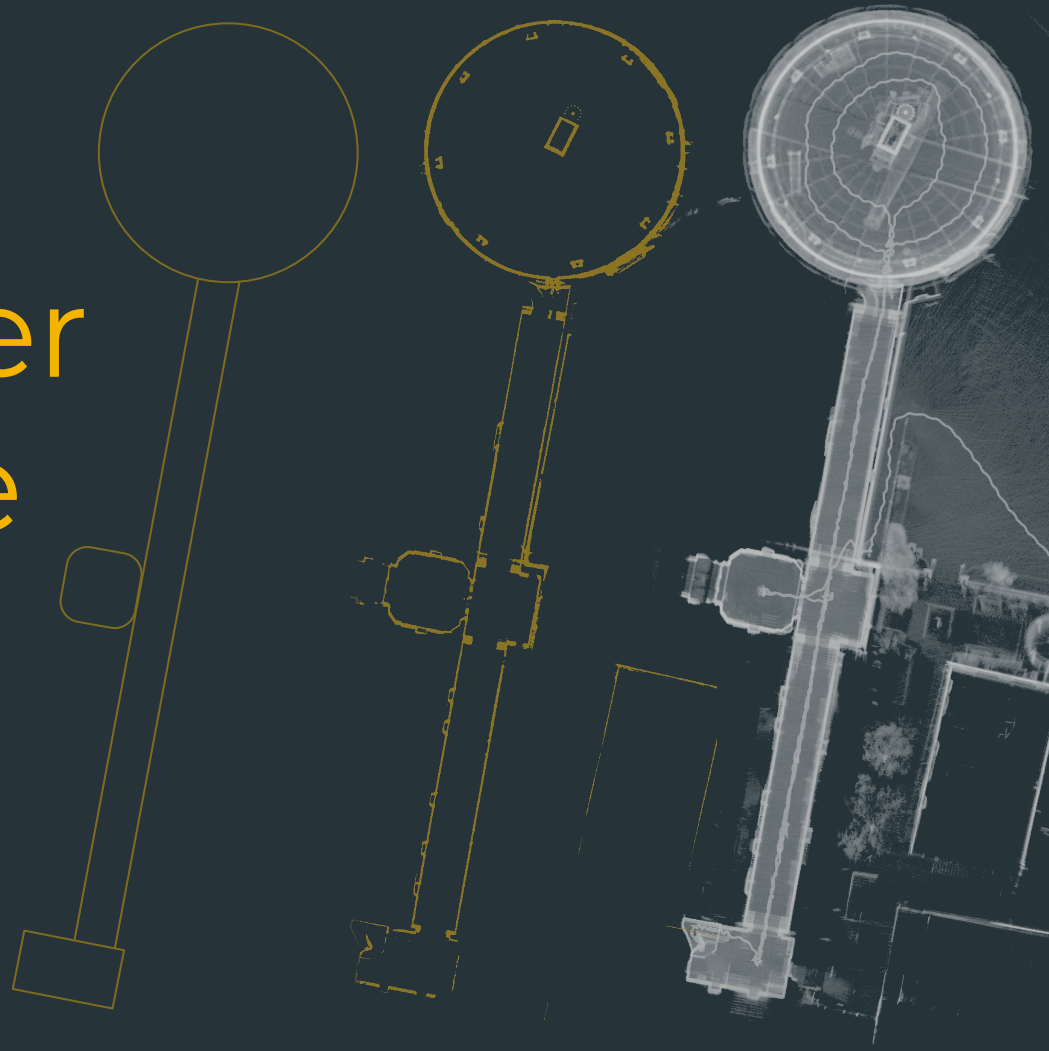


XXIV

Cartographer Open House

02.08.2018



Abseil + CMake 3.2

Cartographer

- [ABSL Remove common/optional.h. \(#1349\)](#)
- [\[ABSL\] Purge common::make_unique. \(#1340\)](#)
- [Make standalone_absl imported target global. \(#1351\)](#)
- [Fix Abseil build command \(#1350\)](#)
- [FindAbseil.cmake: cross-platform library names \(#1348\)](#)
- [Add absl to CMake and Bazel builds. \(#1301\)](#)
- [Use CMake 3.2. \(#1332\)](#)

Cartographer ROS

- [Follow the Absl update. \(#955\)](#)
- [Follow the CMake update. \(#951\)](#)



Fine-grained mutexes

Cartographer

- Don't process PoseGraph2D work items in foreground. (#1341)
- Introduce separate mutex for PoseGraph2D work queue access. (#1333)
- Fine-grained locking for PoseGraph2D constraints. (#1327)
- Don't process PoseGraph3D work items in foreground (#1285)
- Take PoseGraph2D mutex inside instead of outside work item. (#1310)
- Introduce separate mutex for PoseGraph3D work queue access (#1284)
- Take PoseGraph3D mutex inside instead of outside work item (#1264)
- Refactor PoseGraph work queue optimization dispatching (#1252)

Cartographer ROS

- Follow the Absl update. (#955)
- Follow the CMake update. (#951)



Metrics

Cartographer

- Added function GetThreadCpuTimeSeconds in common/time.h (#1267)
- Measure accumulation_duration from last accumulation stop (#1251)
- Remove "_internal" from the metric family names. (#1237)
- Added metrics RealTimeRatio and CpuRealTimeRatio to 2d. (#1324)
- Add metrics: real time ratio and cpu time ratio. (#1275)
- Add sensor counter metrics to TrajectoryCollator class (#1342)
- Add metric counters to track sensor data in the AddSensorDataBatchHan...

Cartographer ROS

- Simplify gauge and histogram implementation. (#922)



Client ID and gRPC robustness

Cartographer

- [Set client_id in LoadState\(FromFile\) \(#1320\)](#)
- [Revert: Fix writing state of trajectories with unfinished submaps. #1286](#)
- [Implement recovery behavior for LocalTrajectoryUploader \(#1287\)](#)
- [Fix writing state of trajectories with unfinished submaps. \(#1286\)](#)
- [Add argument to SerializeState for excluding unfinished submaps \(#1352\)](#)
- [Check client_id in sensor data handlers \(#1266\)](#)
- [Upgrade async_grpc \(#1272\)](#)
- [Introduce client_id in SensorMetadata \(#1257\)](#)
- [Introduce client_id in cartographer grpc \(#1241\)](#)
- [Add token_file_path parameter and enable auth \(#1235\)](#)

Cartographer ROS

- [Follow googlecartographer/cartographer#1352 \(#957\)](#)
- [Follow googlecartographer/cartographer#1241 \(#923\)](#)

Async gRPC

- [Introduce unrecoverable error codes for retry strategies \(#24\)](#)



Truncated Signed Distance Fields

Cartographer

- Add TSDF match cost function. (#1359)
- Introduce GridType for Grid2D (#1355)
- Fix EqualCellProperties matcher. (#1276)
- Add value conversion tables (#1255)
- Add TSDF RangeDataInserter (#1236)
- Add TSDF interpolator. (#1274)

Cartographer ROS

- Move conversion table to LoadOccupancyGridMap. (#941)
- Introduce value converter tables. (#937)



Pbstream (tool)

Cartographer

- [Unified pbstream tool \(#1326\)](#)
- [Migrate pbstream files with old probability grid format. \(#1314\)](#)
- [Add pbstream_info executable \(#1311\)](#)
- [Fix LoadState trajectory options access \(#1298\)](#)

Cartographer ROS

- [Fix pbstream exporting binaries \(#945\)](#)



Store histogram in submap

Cartographer

- Preparation for #1277: refactor rotation scan matcher (#1316)
- (open) Store histogram in submap #1277



Generic Pose Graph

Cartographer

- [\[GenericPoseGraph\] Add InterpolatedRelativePose2D constraint. \(#1337\)](#)
- [\[GenericPoseGraph\] Add PoseGraphController. \(#1335\)](#)
- [\[GenericPoseGraph\] Add InterpolatedRelativePose2D constraint. \(#1337\)](#)
- [\[GenericPoseGraph\] Add serialization tests for constraints. \(#1318\)](#)
- [\[GenericPoseGraph\] Add interpolated constraint/cost 3d. \(#1325\)](#)
- [\[GenericPoseGraph\] Add acceleration constraint. \(#1319\)](#)
- [\[GenericPoseGraph\] Remove unused declarations. \(#1323\)](#)
- [\[GenericPoseGraph\] Add rotation 3d constraint. \(#1317\)](#)
- [\[GenericPoseGraph\] Add proto defs for landmark cost functions. \(#1312\)](#)
- [\[GenericPoseGraph\] Added rotation cost 3d. \(#1313\)](#)
- [\[GenericPoseGraph\] Add relative pose constraint 3d. \(#1309\)](#)
- [\[GenericPoseGraph\] Add a loss function. \(#1308\)](#)
- [\[GenericPoseGraph\] Use GradientChecker to check gradients \(Ba-Dum-Tss...\)](#)
- [\[GenericPoseGraph\] Move ParseProto and Near to test_helpers.h \(#1307\)](#)
- [\[GenericPoseGraph\] Added relative pose cost 3d. \(#1303\)](#)
- [\[GenericPoseGraph\] Add CeresOptimizer. \(#1300\)](#)
- [\[GenericPoseGraph\] Add RelativePoseConstraint2D. \(#1297\)](#)
- [\[GenericPoseGraph\] Add a base class for all nodes and Pose2D node](#)
- [\[GenericPoseGraph\] Add RelativePoseCost2D. \(#1295\)](#)
- [\[GenericPoseGraph\] Add a NodeId struct. \(#1290\)](#)
- [\[GenericPoseGraph\] Add IMU Calibration and Pose3D node types. \(#1278\)](#)



Point Cloud Viewer

- Add new camera controls and minor updates to the native client (#145)
- Remove width & height from get_visible_nodes API. (#142)
- Call get_visible_nodes in a background thread to never block foreground



MiR100 tuning

Cartographer MiR

- Fix Travis config
- Initial repo import



Tweaks and Fixes

Cartographer

- Get rid of std::bind. (#1261)
- Add function to get the work queue delay from PoseGraph. (#1218)

Cartographer ROS

- Add option to disable PoseExtrapolator (#946)
- Warn for possible topic mismatch (#935)
- Allow zero pose publish period (#933)
- Fix bug in FinishTrajectory logic (#926)
- Update msg_conversion.cc (#925)



Current work

- Generic Pose Graph Design
- Fine-grained Mutexes
- TSDF
- Robust gRPC uplink



Placeholder for other status reports



Thanks.

Next Open House:
August 16th, 5pm CEST

If you would like to present anything next meeting, please reach out to cschuet@google.com

