Vector Objects in Nav2 Maps

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Overall Architecture

nav2_costmap_2d

Costmap2D

master_grid

+

KeepoutFilter

=

master_grid

nav2_vector_object_server

VectorObjectServer

Generated OccupancyGrid.msg mask w/ vector objects

user

AddShapes.srv
RemoveShapes.srv
GetShapes.srv

params.yaml

Legend:

topic messages

service calls

new node/package
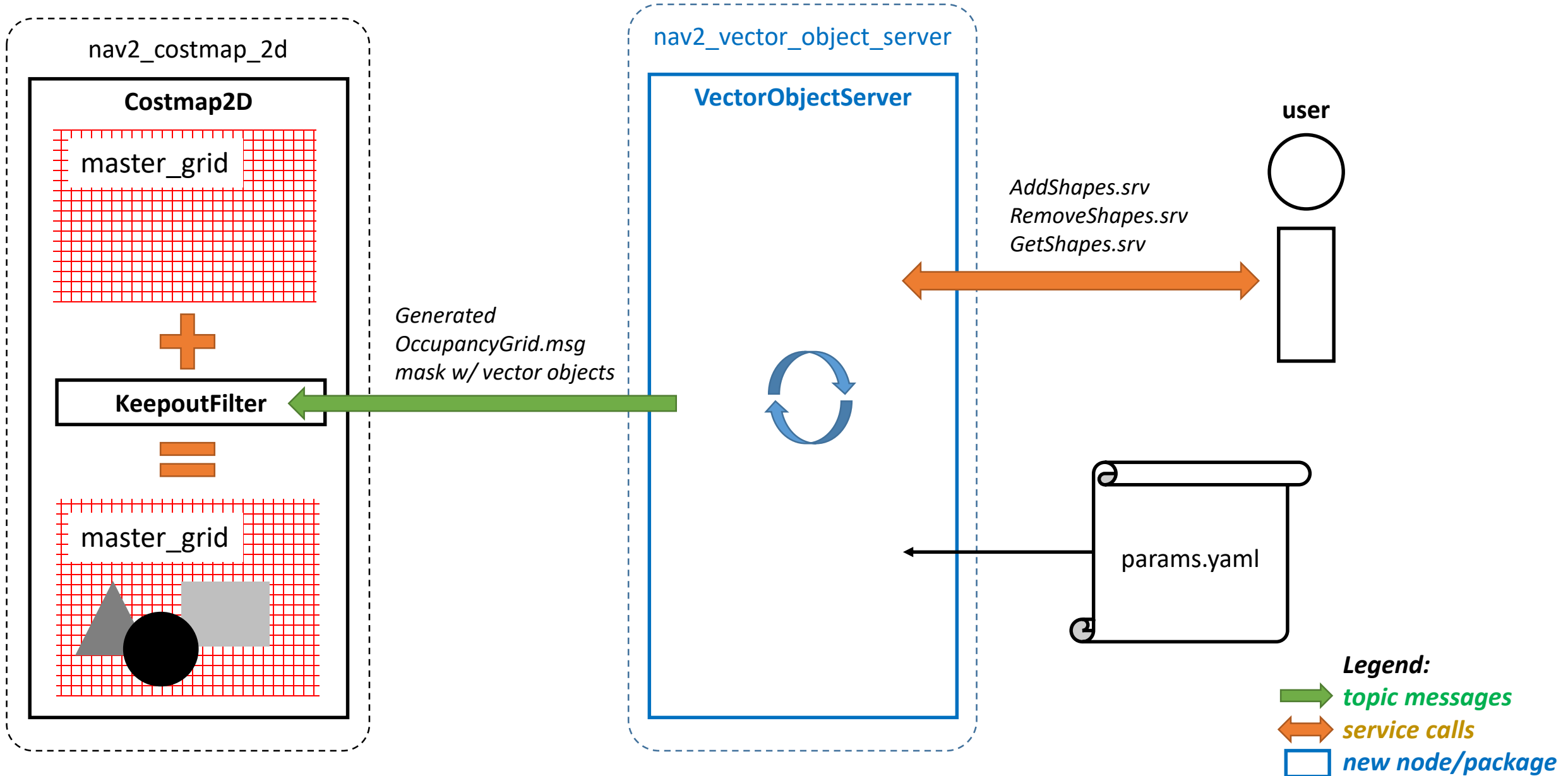
API Details: New Services and Messages

Will update the shape, if UUID is the same as in existing one

`nav2_msgs/srv/AddShapes.srv`
Circle[] circles
Polygon[] polygons
---
bool success

`nav2_msgs/srv/RemoveShapes.srv`
unique_indentifier_msgs/UUID[] uuids
---
bool success

`nav2_msgs/srv/GetShapes.srv`

Circle[] circles
Polygon[] polygons

`nav2_msgs/msg/Polygon.msg`
geometry_msgs/Point[] points
uint32 priority
bool closed
bool transparent
uint8 value
unique_indentifier_msgs/UUID uuid

`nav2_msgs/msg/Circle.msg`
geometry_msgs/Point center
uint32 priority
bool transparent
uint8 value
unique_indentifier_msgs/UUID uuid

i

uint32 priority
bool closed
bool transparent
Refer to the Vector Objects overlays

i

uint8 value (same as Costmap2D)
`[0..254]` range (from free cell … to lethal obstacle);
`255` – no information

Vector Objects overlays

priority = 100

priority = 2

priority = 1

priority = 5

transparent = false
VAL = shape_value

transparent = true
VAL = master_grid

master_grid

closed = true

closed = false