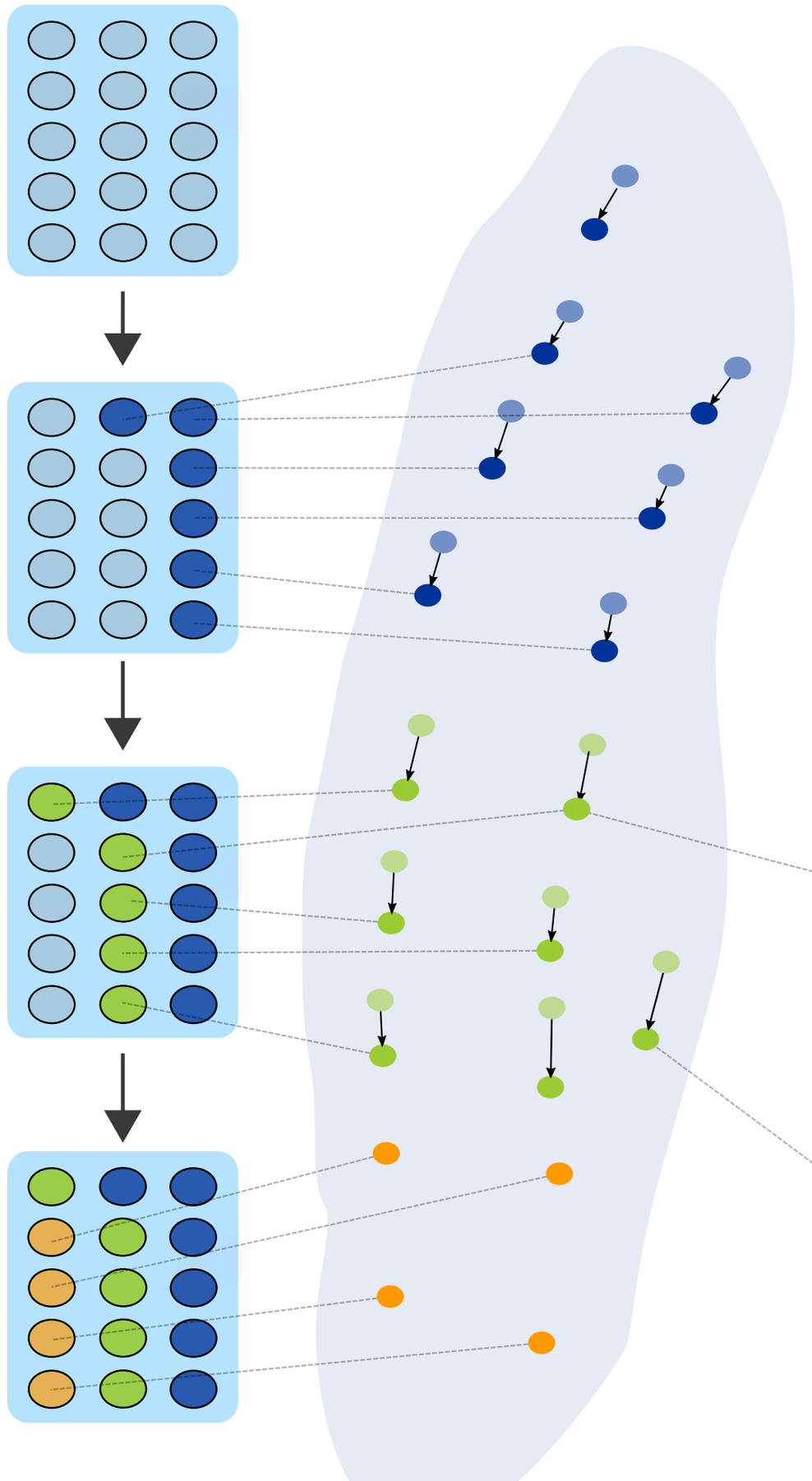
Step 1: A set of new detections arrive from a detection system (indicated here as 15 circles)

Step 2: The existing SLAM map /(dark blue) is transformed into the body frame and the new detections are tested if they can be associated with these. If an association can be made between a landmark in the existing map and a new detection, this new measurement of the landmark is sent to the backend and added to the factor graph.

Step 3: The candidate list (green) is also transformed into the body frame and associated with the remaining detections. Associated candidates are used to update the positions in a Kalman update step and increase their confidence. Those who are not associated have their confidence decreased.

Step 4: Detections that are associated with neither SLAM nor the candidate list are initialized as new candidates into the candidate list (orange).



Every time a hypothesis has been associated to its confidence is increased. If the confidence of a hypothesis goes above the acceptance threshold it gets sent to the backend, to be added to the factor graph as .a new landmark

If a hypothesis has not been associated to when its in the field of view of the detection algorithm, it has its confidence decreased. If the confidence of a hypothesis gets below the rejection threshold it gets discarded