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THE PERSONAL ROBOT



TEMI OVERVIEW



Pbledmic node

Tilt node

Motherboard node

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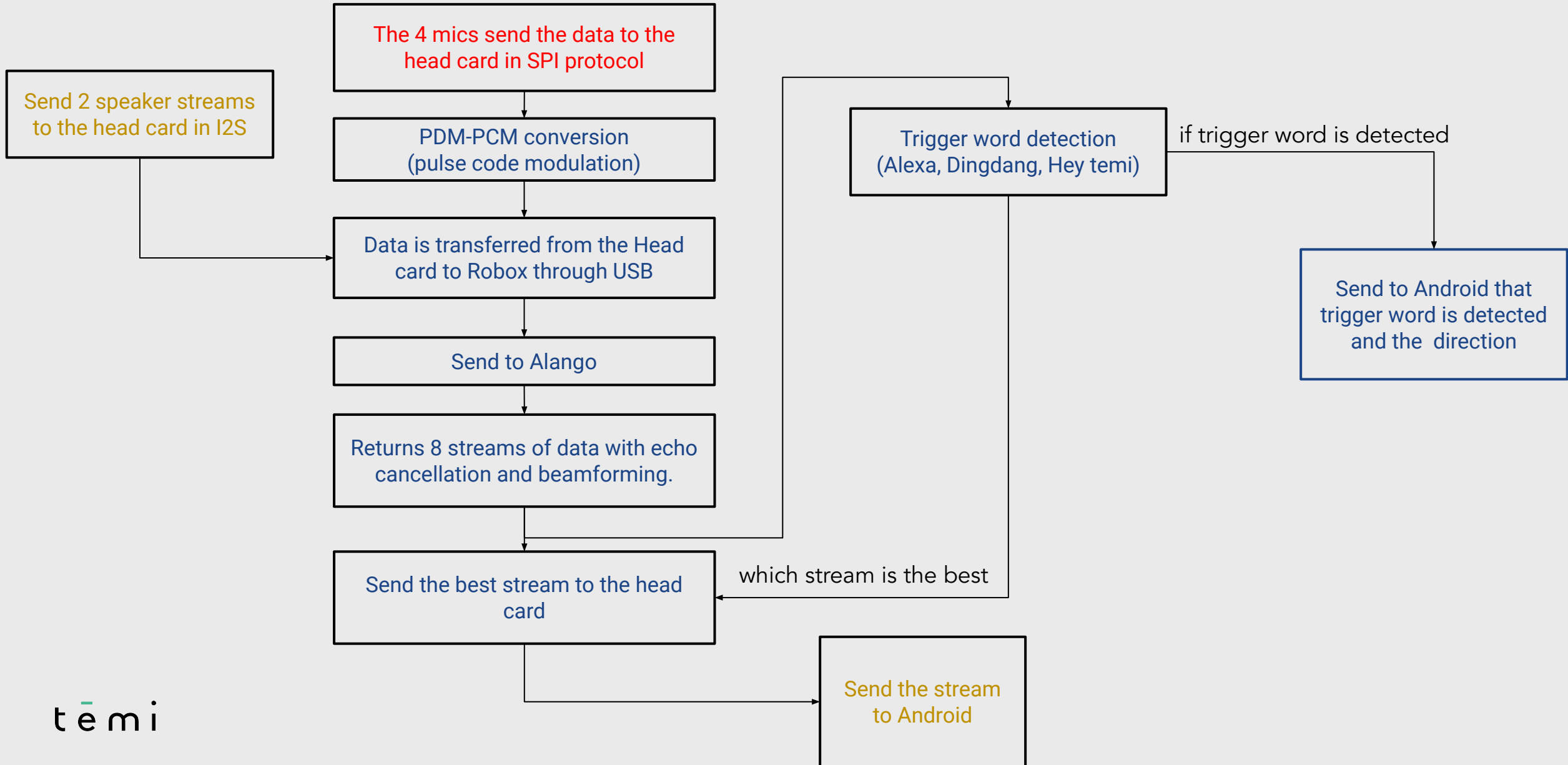


Pbled node overview

- The main purpose of the node is to communicate with the Head card through a virtual serial port. That means that the Linux OS recognizes the Head card as a serial port UART (/dev/ttyS1) but the head card sees it as a USB port.
- Processes the audio that comes out from the card.
- Needs to get a "keep alive" msg from the card in 10hz.
- Gets the indication from the touch buttons.

- Each color represents a different device

Audio process routine



Tilt node overview

- The main purpose of the node is to communicate with the Tilt card on a UART protocol (/dev/PBled).
- Controls the tilt motor (brushless motor, DC).
Today we use two options: set angle or set speed on open loop.
- Chooses the profile of the amplifier (the speaker).
We have two profiles to choose from: media or speech.
- Needs to get a "keep alive" msg from the card in 10hz.

Motherboard node overview

- The main purpose of the node is to communicate with the Motherboard card in a UART protocol (/dev/ttyS4).
- Controls the wheels (brushless motor, DC).
Today we use the option to setting linear and angular velocity.
Checks that the velocity that is set is less than 1.5.
- The “keep alive” msg between the Motherboard card and the node -
the card waits to get a linear angular msg and if the card doesn't get this msg for 200ms it stops the motor.
On the side of the node if it doesn't get the REP_MPU_ODOM_ADV msg from the card in 150 ms, it sends “motor off” and sets an “mb no connection” event.

Motherboard node overview

- Gets report from the card regarding to:
 - 1) Odom sensor: x, y, z, linear velocity, angular velocity, current motor left and right and yaw.
 - 2) Is robot in docking
 - 3) Battery status
 - 4) IMU sensor: roll, pitch, yaw, the accelerometer's x,y,z and the gyro's x,y,z

THANK YOU

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