FOR ALL (30 minutes):

Consider the following line scan cameras: **Device "1":** sensor of **4096 points**, each point of **2.6 micron * 2.6 micron**, able to acquire up to **20.000 lines per second**, price **800 euro**. **Device "2":** sensor of **2048 points**, each point of **4.2 micron * 4.2 micron**, able to acquire up to **30.000 lines per second**, price **450 euro**.

Define **two setups** for analysing objects having a **surface of 3 m * 15 m** at a resolution of **at least 1 pixel / 500 micron** (both along X and along Y): **setup 1** based on Devices like the "1", **setup 2,** based on Devices like the "2".

Which is the **preferable setup, in case we wish save money**?

Which is the **preferable setup in case we wish the fastest acquisition period**?

Consider now only the setup 2:

- **How many objects** can be analysed in 1 hour?
- **And at which distance from the object** the camera should be located mounting a lens having focal **length of 50 mm**?
- **Which is the smallest size of a detectable defect**, if your software needs at least **10 pixel * 10 pixel** for a correct processing?

ONLY FOR ERASMUS STUDENTS (additional 20 minutes): Describe how the Hough Transform for works.