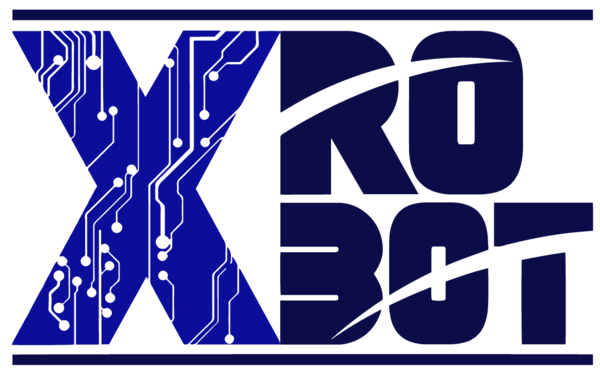
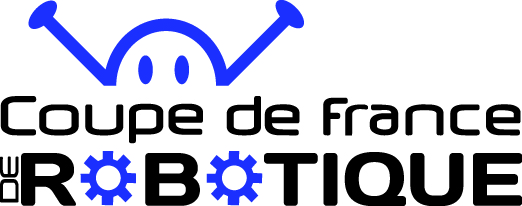
**Sub-system requirement specification Camera**

**Robot**

**Deadline 10th April**

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1. Dimensions

|  |  |
| --- | --- |
| REQU 1 | The system shall not exceed 320mm x 260mm in a vertical projection. |
| REQU 2 | The system shall not have a height over 60mm from the bottom of its support. |
| REQU 3 | The system shall not weight more than 2kg. |
| REQU 4 | The system shall be placed on the mast with a threaded rod 8mm wide at least 30mm long and a butterfly nut. |
| REQU 5 | The system shall use screen cables to avoid electromagnetic perturbations. |

2. Energy source

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| --- | --- |
| REQU 6 | The system shall have its own electrical battery. |
| REQU 7 | The battery should last at least five matches in a row when fully charged. |

3. Identification

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| --- | --- |
| REQU 8 | The system shall identify the type of an atom. |
| REQU 9 | The system shall identify the position of an atom with a precision of 10mm. |
| REQU 10 | The system shall identify the position of two opponent’s robots moving at up to 1m/s with a precision of 50mm. |
| REQU 11 | The system shall give an estimation of the opponent’s speed. |
| REQU 12 | The system shall identify the position of the team’s robot with a precision of 10mm still, 50mm moving. |
| REQU 13 | The system shall identify the orientation of the team’s robot with a precision of 3°. |
| REQU 14 | The system shall identify whether the experiment is successful or not. |

4. Transmission

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| --- | --- |
| REQU 15 | The system shall communicate with the robot using Bluetooth. |
| REQU 16 | The system shall send the processed data to the team’s robot at a constant frequency ≤ 500ms. |
| REQU 17 | The system shall not send unreasonable\* data. |

\*for instance, a position should not be outside the table, nor should the robot’s and the opponent’s positions be mixed.

5. Perturbations

|  |  |
| --- | --- |
| REQU 18 | The system shall be able to calibrate position and colors by itself within two minutes. |
| REQU 19 | The system shall not be influenced by IR lights. |
| REQU 20 | The system shall operate in any conditions of light. |

6. Installation

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| --- | --- |
| REQU 21 | The system shall be set up by one person in ≤ 1min. |