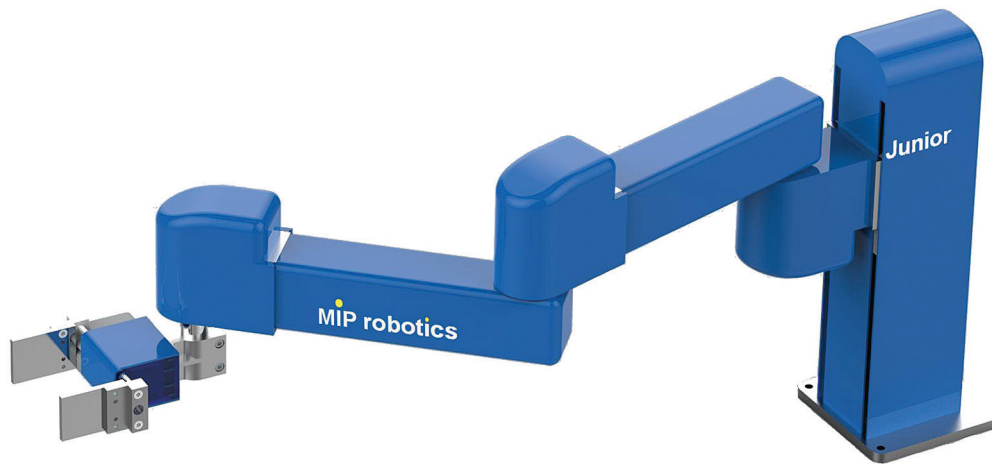


MIP Robotics

# A safe and compliant collaborative robot

Designing a robot is all well and good however it is essential to ensure that it does not represent any hazard for the operator. MIP Robotics, a start-up called on the service of CETIM to do just that.



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## OUR CUSTOMER

**Corporate name**  
MIP Robotics

**Business activity**  
The company, located in Paris (France) designs and manufactures low-cost collaborative robots. It has already installed a dozen robots in SMEs and major corporations.

**Turnover**  
500,000 euros forecast for 2017

**Workforce**  
8 people

**W**hen MIP Robotics created its collaborative robot, the start-up only had two employees. With considerable experience in mechanical engineering, they developed a small model able to work in collaboration with the operators. However, there was still one very important aspect to resolve: ensuring that the robot did not represent any hazard for the user, in other words that it was fully compliant with the “Machinery” directive. The problem was that “*We did not have the necessary expertise in regulations to carry out this work*”, stated Gonzague Gridel, sales manager at the company.

## Mandatory risk analysis

Collaboration with humans is a relatively new context of use for industrial robots which requires an appropriate approach. Accordingly, MIP Robotics called on Cetim to lend it assistance in this process. The centre began by conducting a mandatory risk analysis on the prototype of the robot by following the IDAR method that it developed in order to integrate means of protection that were appropriate and proportional to the actual use situation. In the end, the architecture selected for the robot was not challenged. However, some scenarios have highlighted the

need to make changes in order to guarantee safety. For example, a limit has been provided to the lowering of the arm in order to eliminate potential crushing of the operator’s hand and a mechanical stop has been installed to avoid the danger of squeezing. Finally, a lighting strip has been added to inform the operator that the robot is working in collaborative mode.

## Integration as a complement

In addition, as MIP Robotics wanted to perform integration of its first robot, Cetim provided methodological and technical elements to carry out this operation in compliance with regulations. As a result, the start-up’s robots have now been integrated in workshops. Cetim’s support has provided the start-up with genuine credibility.

## Cetim’s asset

Its involvement in standardisation work and work conducted with the Ministry of Labour, INRS, UNM, FIM and Symop regarding the regulation of facilities incorporating collaborative robots has made Cetim one of the French benchmarks in the field.

