Earth’s resources are becoming lesser and lesser.On the other hand, near-earth asteroids (NEOs) are not just garbage lazily orbiting around the sun.Asteroid mining may be today just an idea, but soon will become reality.

However, not all asteroids are good candidates regarding mining.Firstly, an asteroid of 100m diameter has gravity extremely close to zero and that makes it difficult to land on.Secondly, Dr. Martin Elvis from the Harvard-Smithsonian Center for Astrophysics in Cambridge, US, who has developed an equation regarding asteroids worth mining in Earth’s neighborhood, claims only few near-earth asteroids are worth mining and he introduces a size criterium among others, claiming that asteroids smaller than 100m are practically of no important use.These asteroids also have little quantity of water (as ice) to extract.His equation is based on previous Drake’s equation and finally worth exploiting asteroids near us are determined by the product of the following probabilities more or less:

* The probability for the asteroid to have resources,
* The probability to have resources in considerable quantity,
* The probability reaching the asteroid,
* The probability of a successful mining operation,
* The number of asteroids worth mining.

Now let’s come to another point of discussion.A very basic question is, what do we profit from asteroids after all, why all that mess?Asteroids are categorized into 3 types, which are:

* Carbonaceous (C-type) containing water,
* Silicaceous (S-type) briefly containing rock and metal – oxygen and silicon compounds (could be used in wafer production among others!) and
* Metal (M-type) rich in metals - 80% iron and 20% a mixture of nickel, iridium, palladium, platinum, gold, magnesium and other metals.The platinum group metals are rarer on earth!

Therefore, there is a growing interest in sending robots to asteroids and gain resources – also for refueling the crafts and bringing precious materials down to Earth.Already there are some companies drawn towards asteroid mining such as “Planetary Resourses” or “Deep Space Industries”.

During SpaceApps Challenge 2016, “Termining” team had the main ideas

1)The existance of a “mother spacecraft” performing basic and more general tasks such as asteroid spectre analysis – in order to “decide” if “daughterly” robots should be sent to start mining procedures.

And “daughterly robots”.

2)The existence of a swarm of collaborative robots able to take decisions as a “team”.