

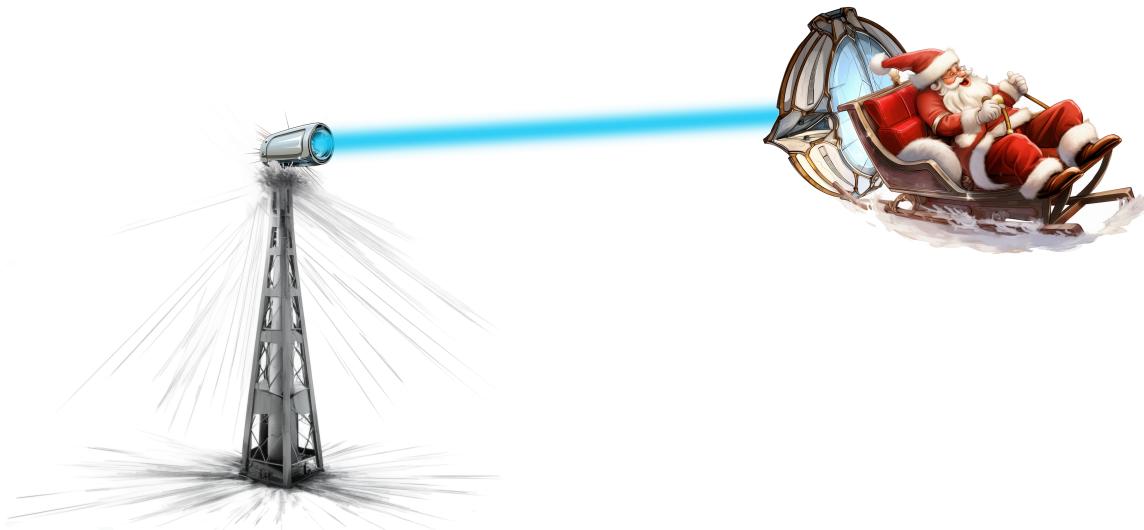
# New Santa's Sleigh

Enigma n°7

14<sup>th</sup> December 2023

Santa's magical reindeer are getting old. In order to have no disruption in the distribution of presents when the reindeer can no longer fly, Santa is testing a new model of sleigh from the future: a laser-powered sleigh.

The concept is simple: Santa Clause needs to ask the elves to construct towers at regular intervals. They will take it in turns to propel the sleigh via ultra-powerful lasers. To prevent the sled from disintegrating, it is fitted with a shield at the rear.



Santa Clause trying his new high-tech sleigh.

If  $D$  is the distance between the sleigh and the tower, the energy transmitted by the tower is proportional to  $1/D$  (due to interaction of the laser with the atmosphere). The speed of the sleigh is proportional to the energy it receives from the tower.