

**Bob 2 (Eve)**

## Mission 3 : Cracking the secure messages

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*50 minutes of gameplay [70/200 points]*

Now, Charlie and Eve are officially a team. Both of you sign a memorandum of understanding (with Ethereum, of course) that you will work together and contrive to spy on Alice's messages. You heard from your informant that there will be a big "secret message" sending event soon. You want to obtain that message, and hopefully "blackmail" Alice and Bob. Huahahahahaha.... Good luck! **In this mission, you will work closely with Charlie to crack the secure messages that is sent by Alice to Bob**

This mission is divided into smaller tasks, which consists of compulsory and optional tasks. The compulsory tasks are marked with either [Checkpoint], [Final Task], or [Secret Task] flags, while the unmarked tasks are sort of optional. It is thus a priority to complete all the flagged tasks before the optional tasks, as one will not be able to revisit these tasks after the deadline. The compulsory tasks are very important for the upcoming missions. It is also highly advisable to split the tasks among your teammates.

### [10 points] [Checkpoint] Listen

*We show here, however, that neither Bell's inequality nor EPR-correlated states are an essential part of the generation and certification of such a shared random secret.*

*- BBM92*

Objective: Listen to every polarisation choices that Alice sends to Bob.

Point allocation scheme:

- [Full] points after completion of the mission

Step by step walkthrough:

1. We will figure this as we go on

### [10 points] Message encryption handout

*Privacy and encryption work, but it's too easy to make a mistake that exposes you.*

*- Barton Gellman*

Objective: Complete the `Message Encryption` handout. No cheating or copying with Charlie allowed [insert stern warning].

Point allocation scheme:

- Based on the number of correct responses in the handout.

Note: Only do this when there is a free time or there is a member in your group who happens to be free.

## **[10 points] Our setup handout**

*All experimentation is criticism. If an experiment does not hold out the possibility of causing one to revise one's views, it is hard to see why it should be done at all.*

*- Sir Peter B. Medawar*

Objective: Complete the `Our Setup, Bandwidth` handout. No cheating or copying with Charlie allowed [insert stern warning].

Point allocation scheme:

- Based on the number of correct responses in the handout.

Note: Only do this when there is a free time or there is a member in your group who happens to be free.

## **[20 points] [Final Task] Listen and collaborate**

*Alone we can do so little; together we can do so much*

*- Hellen Keller*

Objective: Collaborate with Charie to decrypt the message that is sent by Alice to Bob. You will need to successfully decrypt the message at least once.

Point allocation scheme:

- [Full] points after completion of the mission

Step by step walkthrough:

1. We will figure this as we go on

***Performed in the last 15 minutes of the session***

## **[20 points] [Secret Task] Super secret messages, encrypetd**

*Good luck!*

Alice is sending some super sensitive messages to Bob. Hack it! The GameMaster will tell you when the secret messages are being sent. After receiving all the message, **write it down** in the **super secret document** and pass it to the GameMaster after the conclusion of the mission.

Objective: Your team successfully decrypts all the secret messages that Alice sends to Bob.

Point allocation scheme:

- [Full] points if you successfully decrypts all the messages
- A fraction of [full] points, proportional to the number of correctly decrypted messages