Message Received
A Game For Web Browsers

By Dawei Xu
Matthew Stern,
Rongruo Zhou

INTRODUCTION

This document describes a game called "Message Received." It is designed to be a 2d RTS game. Sprite-based animation, tiled backgrounds, collision detection, AI, fog of war and some other techniques will be used.

TECHNOLOGY

This game will be built with JS and the Phaser Engine. The game will be able to be run on most modern browsers with WebGL support.

BACKGROUND STORY

The story in this game is simple. You, as Earth, are on a quest to conquer the Universe. During this time, you learn about the awes and wonder of nature around you as well as the dangers. The story will be told to you by your AI Assistant, RubIO.

You command Earth's production, resources, and troops in a conquest for the Universe. You will have to destroy planets and civilizations, defend against oncoming threats, build up infrastructure, and acquire resources from planets and asteroids. However, this is no easy task! Sending troops too far can be a perilous journey. As your troop gets further away from your location, without the proper infrastructure, your knowledge about their whereabouts and findings becomes less and less as the time it takes for them to send back a message becomes longer. If you get unlucky, someone or something… might know about you before you know about them.

OBJECTIVE

As a commander on the side of the Earth, your goal is naturally to protect your own planet, explore new planets, develop new resources, and destroy or align with other civilizations encountered in the universe. With the increase in resource production, the living standards of our own people have been greatly improved. And productivity has also increased, which makes the expansion of the Earth faster and faster. However,

resources are always insufficient. The rapidly developing civilization of the Earth quickly became the target of other civilizations. Eliminate the enemies who attacked us maliciously, explore the vast universe, and move towards the ultimate goal of conquering the entire universe.

GAMEPLAY

The game will have a top-down view. It will be played by a single player. The player can scroll the map by staying the mouse on the screen border or using the keyboard arrow keys.

The entire map will be covered by fog unless there is a player's unit at a specific location to provide vision. Only players around the main base (Earth) have an immediate vision. Long-distance units need to provide delayed vision by sending messages to Earth. Therefore, the player can only get the vision provided by the units at the time when the message is dispatched.

This game will have six levels, where the first five levels will include story-like elements and world (or Universe!!) building with increasing difficulties whereas the sixth level is an unbounded free for all with nothing to stop you. The first level will be a tutorial level! This level will take place in our own solar system without the asteroid belt. There will be an antagonist human civilization on… PLUTO! This level will teach you about resource management and production, as well as managing troops in space. The second level, will test you on those skills. This one will take place in our solar system, with the asteroid belt and some rogue civilizations of humans outside of the belt. During this level, you may notice that there are minor time delays with troops near the edge of the solar system… but not so drastic, maybe barely detectable… However, in the third level, the time mechanic will be truly realized. In the third level you will be going up against our MILKY WAY GALAXY!! In this level there will be aliens with new behaviors, different to how humans behave. The fourth level will be the discovery of the new horizons past our solar system. A short but sweet level, where you will learn to build infrastructure to handle long distance messages without the delay as you look to find new resources in the galaxies around. At the end of the level you will learn that there are other threats outside the Milkyway galaxy and other civilizations. The fifth level is about defense and how to prepare against these new more dangerous threats. Perhaps you'll run into an Unknown Alien, that will find you before your warning, or maybe a bandit that destroys your troop (maybe you won't know, but you also won't be receiving messages), or maybe a parasite that turns your troop against you, or maybe it's another civilization… The sixth and final level, is yours, a free for all, a sandbox!

CONTROLS

This game will be played using both a keyboard and mouse. The mouse is used to move the viewport, frame and select objects, perform moving instructions, perform attacking instructions, choose targets, and quickly move the viewport by clicking the mini-map. The keyboard is used for shortcut key commands, moving perspective, object formation, etc. Once started, use the following:

- **Mouse Left Button Down -** Start frame selection
- **Mouse Left Button Up -** End frame selection
- **Mouse Right Button Click -** Attack/ Move to target position
- **A -** Attack
- **S -** Stop
- **H -** Hold
- **M -** Move
- **P -** Pause
- **ESC -** Cancel
- **Left-Arrow -** Viewport move quickly to left
- **Right-Arrow -** Viewport move quickly to right
- **Up-Arrow -** Viewport move quickly to top
- **Down-Arrow -** Viewport move quickly to bottom
- **Music** - On / Off
- **Sound Effects -** On / Off
- **Volume of Sound Effects -** 100%
- **Volume of Music -** 100%

GRAPHICAL USER INTERFACE

For the whole game, we consider making

- **Splash Screen** - Splash Screen will consist of background pictures and the game logo. The first mouse click will trigger the playback of the background introduction. The in game AI Assistant, RubIO will briefly introduce the game. The introduction consists of text and audio. When the mouse is clicked again during the introduction or the introduction is completed, the game will leave the Splash Screen and switch to the Main Menu Screen.
- **Main Menu Screen -** The Main Menu Screen will consist of background images, the game logo, and some buttons. These buttons include the following functions:

- ○ **New Game -** Clicking New Game Button will switch the screen to Levels Selection Screen.
- ○ **Help -** Clicking Help Button will switch the screen to Help Screen.
- ○ **Controls -** Clicking Controls Button will switch the screen to Controls Screen.
- **Levels Selection Screen -** The Levels Selection Screen will consist of background images, a label for showing some description about selected level, and some buttons. These buttons include the following functions:
    - ○ **Start -** Clicking Start Button will start the game with current selected Level and switch the screen to In-Game Screen.
    - ○ **Back -** Clicking Back Button will switch the screen to Main Menu Screen.
    - ○ **Lv1~Lv6 Buttons -** Clicking Level Buttons will display the description about the selected Level in the text label. Levels are locked except Lv1at the beginning. The player needs to pass the Level x to unlock Level (x+1).
- **Help Screen -** Help Screen consists of pictures, text, and buttons. The main content is to introduce some fundamental in-game problems, such as the fog of war system, the vision delay delivery system, and the command delivery system. The buttons include replaying the splash sceen's introduction and switching between different aspects of help.
- **Controls Screen -** The Controls Screen will display various operations that the player can perform, as well as current shortcut keys. The player's click on a shortcut key will trigger the edit mode. In edit mode, the player's next keypress will be recorded as a new shortcut key for the operation and exit edit mode. The Controls Screen also contains Save Button and Cancel Button to save changes or cancel changes.
- **In-Game Menu -** When the game is in progress, and the pause game shortcut key is pressed, In-Game Menu will be displayed on the screen while the game is paused. The menu contains the following buttons:
    - ○ **Help -** Clicking Help will display a menu to show the text about the game system. It's overall a smaller version of Help Screen.
    - ○ **Controls -** Clicking Controls will display a menu to change the shortcut keys. It's overall a smaller version of Controls Screen.
    - ○ **Restart -** Clicking Restart Button will restart the current game with the same level of difficulty.
    - ○ **Quit -** Clicking Quit Button will quit the current game and switch the screen to Main Menu Screen.

- **In-Game Screen -** The viewport will be located at the base when the game starts. The base will automatically start to collect resources once the game begins. Some troops will be spawned near the base in idle states. There will be a bar on the bottom of the page displaying the following from left to right until the game ends:
  - **Mini Map** - A map view of the entire game world, the unrevealed part will be displayed as black (fog of war).
  - **Unit Status** - Name, hit points, energy points, attack damage, and an icon of the currently selected unit.
  - **Command panel** - Listing actions that the selected unit can perform, should displayed as a 3 X 4 grid.
  - **Menu Button -** Clicking Menu Button will pause the game and show the In-Game Menu, which has the same effect as pressing keyboard p as the default shortcut key.

ARTWORK

All artwork in the game will either be original or made by Stony Brook students. The following needs to be created:
- **Background Pictures -** Some background pictures which are used to put in Splash Screen, Main Menu Screen, Help Screen, and Controls Screen.
- **Helping Pictures -** Some pictures work as samples that are used to put in the Help Screen. They will help the player to understand the system of the game.
- **MiniMap -** MiniMap will constantly remain on the In-Game Screen. It uses green dots to represent the player's own units and red dots to represent enemy units. If an enemy unit is far away, and its information is conveyed by Message, then it uses flashing arrows on the minimap to indicate where it was and where it was face to when Message was sent.
- **Planets -** The units which are similar to buildings. Technology developing and units producing function will open after they are occupied. Each will require animations for:
  - IDLE without getting occupied
  - IDLE with getting occupied
  - Producing Units
  - Taking Damage
  - Exploding
  - Exploded

- **Fighting Units -** The units which are used to fight with enemies. Each will require animations for:
  - IDLE
  - Moving
  - Attacking
  - Taking Damage
  - Dying
  - Dead
- **Build Units -** These units are used for building defense, offense, and relays for message transmissions
  - IDLE
  - Moving
  - Building
  - Taking Damage
  - Dying
  - Dead
- **Architects** - The units which are used to occupy the planets. Each will require animations for:
  - IDLE
  - Moving
  - Occupying
  - Taking Damage
  - Dying
  - Dead

SOUND EFFECTS

The game will use mostly ambient sounds to simulate the vastness of space. There will be sound effects for warnings, fights, messages, victories, failures, deaths, etc. There will also be a wind-like effect that gets louder as the user pans the screen faster.

MUSIC

There will be soft piano music for the main/title screen and while looking at menus in game.