

Traveller AR Launch Release 1.0

Product Requirements / Game Design Document

Release 1.0 (June 2011)

Traveller AR is a Space-based MMORPG Game for iPhone that provides an engaging and visually immersive experience with deep RPG complexity to fans of Space-based RPG games.

Manifesto (preface by Marc Miller and Tony Howlett)

We are producing a fast, fun, intriguing, and potentially addictive MMORPG for the iDevice platform based on the classic Traveller P&P RPG. In our preliminary discussions with Marc Miller, he recounted the history of his text-based Trader for the Apple II - in which players could travel from world to world, buying goods low and selling them high, carrying messages past dozens of worlds, or just exploring the worlds his game had created.

Our technology can achieve all of that (especially the fun of travelling and exploring new star systems) and more. Our goal is to achieve three specific results:

- RDME. A Rich Decision making Environment where players can return again and again, always able to develop new game play strategies in response to new challenges.
- Fast. Players should be able to play for a few minutes at a time: waiting for the bus, for class, for lunch, always returning to where they were, always able to make a few fun decisions and then move on.
- Fun. Players should always encounter fun challenges: with good feedback on their decisions, as they move through the Traveller universe of star systems and worlds.

We are creating an Free-form RPG experience, where players may choose what to do, when to do it and why. We are designing for at least 3 distinct gameplay types:

1. Explore - Much of Traveller is just about “going someplace new”... exploring the known galaxy, and meeting new races and new people. Some players may never fight a single battle, but instead explore large swaths of unexplored territory.
2. Fight – The Traveller universe is filled with danger, intrigue, and war. There are hostile aliens, hostile pirates, and otherwise aggressive encounters, and if you choose to stand and fight, Traveller-AR will let you to do just that. Some players may choose to ONLY fight in PVP or PVE battles, and concentrate all their efforts and time into “fighting the good fight”, or “fighting for profit/themselves”.
3. Trade – Commerce is alive in Traveller and buying low, selling high, and living to enjoy the profits may be the only thing some players live for. The vibrant economy system will let players optimize their flight paths and trading skills and benefit mightily by a well executed strategy.

In addition to each of these 3 playing styles, many players may choose to do a combination (fight/trade/explore) or all 3. The game is being designed for people who not only love Traveller and are long-time fans, but also for people who are simply fans of Science Fiction/Space RPGs. Playing Traveller-AR lets players of both types:

1. Become instantly immersed in the beautiful and deadly augmented reality of deep space.
2. Explore a Galaxy’s worth of depth achieving new ranks, trophies, and skills.

3. Engage in exciting PvP or PvE battles or simply explore and trade for infinite replay-ability.

Finally, we want this game to be faithful to the Traveller universe and its principles. For many people, it will be totally new, but for the experienced Traveller player, it will be familiar and faithful to what they already know. Traveller has built its universe over thirty years, and it has withstood the tests of time; we want to depend on its wealth of detail to help us present a positive experience to players. We have resources in the form of game rules texts for reference; and we have rapid-answer experts available when questions arise.

1) Movement

- a. Players move through space at a constant rate until stopped or course is changed
- b. Speed is rated in thrust numbers 1-6, players can set the speed by via the click wheel (boost pops out a choice of numbers 0-1, zero = stop, keeps us from having to have a separate stop button). Current Speed should show on HUD
- c. It takes 1 second (or some appropriate time to speed up for each G). the same when coming to full stop.
- d. Thrusting produces a a “boost” sound for speed, faster as you increase speed. A different sound for reverse thrust.
- e. As a PC approaches any static object (base, planet, sun), certain affects take place at B range (zero hexes). Bases will ask you if you want to dock. Planets will ask you if you want to skim fuel atmosphere (in the case of gas giants and if your ship can do it) or take damage otherwise. Planet’s atmosphere will begin to damage ship. Suns give damage at much father range.
- f. Radar system/coordinate system on the HUD, so you can tell where you are and where you need to go
 - (1) Specifically... your ship is in the center of the radar and your currently facing direction is “up” on the map. As you rotate your free-look view what is “up” is still what you are facing, so the radar map continues to rotate, but your ship keeps facing “up” in the radar.
 - (2) Planets on the radar are small circles, ships red triangles, etc.
- g. Collision detection should be implemented with SHIPS->PLANETS (where the ship slows infinitely when they approach a planet and it takes damage at some point (slowly,just enough to ward them away) SHIPS->Starbases (slows, asks if want to dock. If ship continues, it is “repelled” away back to just outside B distance by defensive pressor fields.
- h. Collision detection BETWEEN SHIPS (both PC and NPC ships) should NOT be implemented as it is complex to get right (lag & latency compensation required)... Instead ships that pass each other will “just miss”. *no ramming in 1.0*
- i. Fuel:
 - (1) In-system travel is considered to be powered by fusion drives and essentially unlimited
 - (2) Jumping requires fuel. Your tank can hold up to the limit of your jump drives and must be refilled either at a starport (for cost), free at a base (if player is the right class) or by skimming gas giants (if you have the attachment)
 - (3) Free home and Main system jumps (defined later) are not considered to use fuel, they use wormholes for instant transportation.
- j. Asteroids/Belts
 - (1) Asteroids in a system will be concentrated in concentric belts around the system (determined by the extended system data). There will be a number of the larger 3d asteroids in these areas (but not a crazy density). There will also be a larger number of small rocks and dust not visible (perhaps a slightly different background with a haze: TBD)

(2) Flying in these areas is hazardous. There is a X percentage chance in a given time of incurring small damages by being hit by space dust. Ship will shake (vibrate phone) when this happens. The chance increases with speed.

(3) Piloting skill will have an effect on this lessening the chance

(4) In 1.0, you CANNOT collide with a visible asteroid 3d model., you just slide past it similar to other ships.

k. Jumping

(1) Characters can “jump” in space as long as they are X distance from a planet and Y distance from any solid object (ship, base, etc).

(2) They can jump as many hexes as their jump drive will allow (J rating=) and they have fuel for.

(3) Jump drives can be refueled at either starports, bases or skimming gas giants

(4) There is a chance for a misjump (randomly putting them anywhere within jump range, even the same system) with every jump. It is small but increases with distance to gravity wells such as ships (jumping in a battle)

(5) Scouts and other characters with good astrogating skill have much lower chances of misjumps

l. System status

(1) Each system is rated by the Travellers Aid Society for travel as either “Normal” “Yellow” – Dangerous or “Red” – Interdicted. Yellow systems are rated dangerous due to various conditions such as wars, high rate of bandits, etc. One may go there at their own risk and there are no restrictions on PVP due to the lack of imperial authorities to restrict it. Red areas are off limits to civilian populations for various reasons (plague, intrinsically dangerous areas, high asteroids, radiation, etc) or for military reasons. Any player caught in these areas may be boarded losing fame.

2) Combat:

a. Players should be able to target ships (touching and getting a reticule) and then be presented with context sensitive navwheel options

(1) Pressing “lasers” begins firing your lasers at the selected target continuously (at the laser’s firing/recharge rate).

(2) Pressing “missile” launches 1 missile at the selected target.. and then another missile cannot be fired until recharge rate/timer.

b. Reticule: when touched a ship (PC or NPC) should display the reticule with the following information: PC or NPC name in color related to fame/personality (red = -5 or hostile, yellow=negative to-4 or aggressive, green=0-5 or friendly, blue=6-10, or government , type of ship , and Hull Points (HP) as a bar.

c. The color of the ship type would be based on relative strength of the ship; PC HP – Target HP, perhaps a positive value is green. Low negative values are yellow and big negative values red.

d. HUD elements

(1) Hull Points

(2) System status for

(a) Fuel

(b) Cargo

(c) Weapons (charged/Disabled)

- (3) Jump range
- (4) Speed
- (5) Location X/Y/Z
- e. Attack actions (missile/laser) are not present on the wheel unless in range of one of the players weapons; 7 hexes on hexmap or equivalent in portal views
- f. Combat follows combat scripts which use "To HIT" and "Damage" and "AoE" calculation all done Server-side (to protect security/prevent cheating)
- g. When a ship is selected and the players hits "lasers", any laser type weapon automatically fires as often as it can till turned off by selecting lasers again.
- h. To fire missile weapons, the player must press the missile button
- i. If a player has lasers "not in recharge mode" and a missile is incoming, one of the lasers will deploy to try to hit it, rather than the selected target
- j. When player armor points reach zero, their ship is destroyed, destruction animation played and death sequence takes place (see below)
- k. "Hits" on your ship cause phone to vibrate; single Buzz on hit, multiple Buzz on kill.
 - (1) Also plays a sound like you got hit.
 - (2) Missiles explode on hit (animation)
 - (3) In Portal-View, when you are hit with missile, it shows flash or 2 of orange on the screen.
- l. If a ship is carrying defenses (sandcasters) they automatically fire when the ship is attacked.
 - (1) Sand casters provide protection form laser attacks for a short period and have a long recharge rate.
 - (2) See the combat charts for specific lists of weapons and effects/damages
- m. Loot – when a player or NPC is destroyed, Loot may appear. It will be randomly generated for NPCs, a percentage of cargo for PCs. It will appear as floating containers which can be clicked on and brought aboard. A list box will come up and you can select the items you want to take; leaving ones you don't . You may only take to the limit of your cargo hold.
- n. PVP/PVE
 - (1) In the inner system (the orbit on the farthest out planet); there is no PVP, only PVE. Players can be attacked by hostile NPCs.
 - (2) Outside the inner system, in "deep space", anything goes, PVP, PVE and the NPCs will tend to be tougher.

3) Starports and Bases

- a) TradeCenter
 - (a) Players will be able to select from a list of trade goods in the "trade center" to buy. This will go in their hold up to its capacity (think backpack in D&D games). Players will also be able to sell anything in their hold for the listed prices.
 - (b) Prices and goods offered will be based on the Trade engine build on the lists and formulas provided
- b) Shipyard
 - a. Players will be able to order repairs on their ship, priced per hull point. Certain player types or skills as well

as location and macroeconomics factors will affect listed prices.

- b. They will also be able to buy upgrades to their ships (weapons, countermeasures, etc). Players can only buy items that will fit on their ship (a scout courier has 2 hard points so can fit two normal sized attachments at most).

(1) DMs will have a Web based interface to add/modify existing upgrade items and ships

- i. EXAMPLE: "Purple Laser of Doom" is a "Laser Type" "Weapon" with Damage = 1.2x laser, etc.

(a) This way we can easily add some variety of upgrades, all based on some "base classes" of items.

- c. They will also be able to buy whole new ships. A few upgrade ships will be available at each starport. When you buy a new ship, you get trade-in credit on your old one plus any upgrades of 50-90% depending on your skills. Starter ships get zero tradein value.
- d. All ships and upgrades have a standard price, same galaxy wide.

c) Imperial bank

- a. Players will be able to do in-app purchases (all of which are TBD).

d) Travellers Aid Society (TAS) Club

- a. The typical starport bar found in every starport that contains a bulletin board of available plus NPC talk. Players may chat in the lower window and also see some "rumors" flying by if they listen close

(1) We will have a language filter for bad words for our Chat engine.

(2) Tabbed for easy filtering

e) Other bases

a. Navy Base

- 1. Naval Character can close to B distance and dock. Any hull point damage is replaced and there is a similar "mission" board and chat area in the Officers club. Other players receive a warning message and will be fired on if they don't move away

b. Scout Base

- 1. Scout characters can close to B distance and dock. Other characters are ignored and are pressor'd away if they tarry. Any hull point damage is replaced and there is a "Scouts lounge" similar to the Officers club

c. Research Station

- 1. Can only orbit it now and receive a message for scientists only

4) Modes:

a) **HexMode**

- a. Hexmode will have three levels of zoom:
 - (1) System Summary – picture of main world on left, system summary on right , using long text version of UWP
 - (2) Whole System (showing large, static objects only) available anytime, for any system
 - (3) Sensor range: shows ships and other non-static objects within range.

b) Portal Mode: Looking out your spaceship window, 1st person. Two views possible:

- a. AR view: uses compass and accelerometer to show you a 360 view of space around you. Camera is ON. Move is by touch.
 - (1) AR capabilities – There will be hidden space “caches” containing credits, secret messages or other special items tied to GPS locations that can only be seen on AR camera on mode. Because of their stealthy nature, they don’t show up on sensors (visual scanning only!).
- b. “Space” View: Acts the same as AR view but with Camera is OFF with a space background
- c. “Tilt” view: same capabilities as AR view, just instead of having to turn around to view 360, you can move camera by tilting phone. Camera is OFF
 - (1) The Caches are not viewable in this mode.
 - (2) This is not “flight in space”... it is simply changing the angle of your portal-view by tilting the iphone... rather than using compass. (e.g. your free-look is done by tilt, rather than by actual iPhone compass)
 - (3) Just as in other views, You still must “touch” the screen to begin moving the currently facing direction.

5) Nav-Wheel

- a. It is always context sensitive
- b. It is “easy” to use and “stops” at each item.
- c. It displays a menu of possible options depending on what is happening in the game (engaged in combat vs. flight vs. trade, etc.).

6) Character Generation/Development

- a) Upon first login, players will be taken to character screen to generate their first character. Upon subsequent logins, player will default to last character used and they may access character management from the “char” choice on the nav-wheel or “account” from the main menu
- b) Character generation will offer a “quick pik” option to just choose a character/ship combo (see our trailer video)
- c) Initial character/ship selection will be:
 - a. Spacer (Navy) / Fighter
 - b. Scout / Scout Courier
 - c. Trader / Beowulf free trader
 - d. Merchant Marine / Far Trader
- d) Character sheet will show stats on Ship and Character in two tabs

- e) Players advance in several ways
 - a. Ranks – gained by completing missions in your class
 - b. Skills – improve with rank, but may be added/improved by doing related activities successfully. For example for every profitable trade, a traders, mercantile skill may improve.
 - c. Money gained – every successful mission gives a player credits. These may be used to buy ship upgrades or new ships or many other useful items
 - d. Epic ranks or badges – given away for special or unique challenges. For example, if a player clears an entire system of hostiles, they might get a “System Commander” medal
- f) Character page will contain four tabs:
 - a. Character – generic picture with character stats, skills, ranks and badges
 - b. Ship – Ship picture with stats, customizations, etc
 - c. Cargo – a listing of cargo on the ship. A button next to each to “jettison”
 - d. Missions – list of active missions with “drop” button next to each. *max 10 active missions. Ability to “drop” a mission on this screen.
- g) **Fame system**
 - a. players will earn “Fame”, a score from -33 to 33 that rates how players are perceived by the game world. A high positive fame would generate trade benefits, assistance from Navy ships, etc. A low fame setting would generate attacks from imperial ships, but also possibly interesting trade offers, missions, etc.
 - b. Players should start a zero (basically unknown, good or bad) and as they do things gain fame points. Negative actions such as Pking, getting caught with illicit trade goods, etc will lower fame. Shooting negative fame characters could actually raise your Fame.

7) Mission Engine

- a. This module generates missions for players to take. Missions are assigned at the TAS club at spaceports. There are generic missions such as:
 - (1) Kill 3 pirate ships (for spacers)
 - (2) Bring X amount of a specific trade good to a specific port
 - (3) Gather samples (skim) from X planet) for scientists
 - (4) Take a special passenger to X port (pilots)
 - (5) May more mission Types.. each mission type should be able to be assigned as a “unique mission type” by extending it with “flavor text”.
 - (6) DMs will have a WEB_Interface to make a new missions . Making new “unique missions” will be easy with the WEB interface (it’s just location + flavor text + mission_type + Extra_Rewards (if any, including \$\$ and possible Epic Badge/rank))
- b. We will need to populate the engine with a hundred or so standard missions. We can probably script random generation to make it interesting i.e. “Find and Shoot X pirates for Y credits in the Z system”

8) NPC chat

- a) A database will contain many different NPC sayings and phrases. These will be what NPCs say when hailed

or banter in starport lounges. Most will be simple and inconsequential to game play: “Headed to starport to drop load” “Hi, know a good place to find a mission?” etc.

9) Login/Credentials

- a) There will be an easy way to log in (ideally automatically with your last used character).
- b) Character should be able to create up to 3 characters and choose which character you want to play as.
- c) It protects player credentials and prevents fraud (matched to Phone ID) *see MRD
- d) There will be a decent but secure password recovery system *see MRD

10) System Population Engine

- a) There needs to be an engine to randomly populate systems with NPC traders, fighters, bad guys (both warring alien races and pirates), asteroids, and stealth caches (see AR section).
- b) Populations should be based on system type (UWP), player density (to fill out the game and give it a lived in look) and other macro conditions that we can set.
- c) The engine would respawn/despawn objects as player “used” them (destroying pirates, asteroids, etc) as well as despawning
- d) AI scripts need to be written for combat (when NPCs attacks, what do they do, etc) and also for friendly NPCs (traders going about their business, navy ships patrolling, etc.)

11) Communication

- a) Players can “Hail” other players in sensor range and open up a basic chat window
 - a. This text would appear in a small drop down on the HUD with the last one or two lines showing. You can hide this element
 - b. Also need the Chat language filter here. (for bad curse words/etc.).
 - c. Also need an “Ignore user” button for annoyance protection.
- b) NPCs will often hail with predesigned messages