

The Bought and Sold Universe.

The technology of this Universe is all about trade secrets. What can be controlled is *strictly* controlled and most races don't like to tell *anyone* how it works with only a few notable exceptions. Everything has to be bought and registered in pieces... except for the slaves.

Slavery is alive and well unfortunately for many. For the most part it is treated as a fact of life in practice. The general attitudes towards slavery tend to depend on racial outlook. Where slaves are only natural in one culture, another will consider them abhorrent. It is difficult to absolve slavery when one of the primary known powers in the galaxy are the chief advocates and drivers of the practice.

Writing Note: This is the stuff I've developed thus far of course. It is however a big Universe, it is best to think of the things I've mentioned so far as the mainstream 'core technologies'. That stuff that is common. I'm not against divergent technologies but such things are carefully controlled and protected by their owners.

Technological conventions.

The Harness

The base component of most gear and personal equipment is the custom made harness. 3dimensional scanning technology makes it a trivial matter to make a harness to suit. They come with an auto retract feature to properly fit the harness to the wearer. This is absolutely necessary to some of the gear a harness will carry. A loose harness simply will not hold features like harness limbs. It will have numerous embedded powercells and a larger powercell along one of the vertical straps.

-The Limb. Many harnesses provide one or more extra limbs for the user. They come with various types of course. Many limbs have all purpose connectors so the user can swap between tools or weapons as needed. Dedicated limbs are often needed for higher performance tools or weapons.

-The Deviation field. A D-field emitter can be seen by a pair of symmetrical blocks or devices on the harness. One block will provide the control hardware. The other carries the heatsink for the D-field. Various little emitters will be installed throughout the harness in order to maintain the field.

-Data package. Typically a collar on the harness surrounding the head of the wearer. It is often kept close to the jack point of the wearer to avoid unfortunate catching. Collars are usually quite bulky. Less advanced and compact designs are typically used in their construction. Datacollars are usually a stop-gap measure for those who cannot or do not wish to use proper implantation and support systems.

-Field emitters. A construction on the chest or back of the harness. There are two common types. Holo fields and Gravity fields. The Holo fields are able to project a false image, causing the wearer to seem invisible. Supporting gear is needed to defend against other forms of observation. As for Gravity field only the most advanced gravity fields can actually support flight. Most just serve to lighten the wearer, or make them heavier. Low cost versions typically just offset gravity disparities. The best can deflect in odd directions on the fly, supporting agility and combat.

Makers

The ubiquitous tool of the space faring engineer. Makers come in several variants depending on the materials and purposes of the maker. The most basic feature of the Maker is that the core 'black box' component. The Maker is exceptionally difficult to open up and inspect. And those who can open it easily usually don't even need to. The maker is capable of molecular assembly, taking basic provided elements and building them into advanced alloys and materials.

The schematics used in the Maker are not a default offering. Bundles and tiers must be registered and bought. Engineering packages to build and modify your own designs are an additional cost.

It *is* possible to design your own engineering package, but you still need to be communicating with the native proprietary operating system.

There are basic material makers, used for simple hand tools and physical components.

Technical makers are a class used for moving parts or parts with 'active components' such as electrical parts for instance.

Soft materials tend to require a slightly different process to make and call for their own methods and styles of makers. It's as much the final production methods as it is the materials that give soft makers their purpose.

Food makers are possible, but typically only good for basic ingredients and rations. Makers for complex meals are possible, but tend to be prohibitively expensive, and that doesn't include the recipes.

Complex makers such as drone or vehicle building packages usually have a single large black box or several different black box combinations based on the needs and types of components expected to be used.

There are styles of makers used in larger gantries for constructing buildings or ships as well of course.

Dimensional Beacon

Usually called the 'Sub-space' beacon. The Beacon is just a part of the structure. Most of the construction exists in that sub-dimension. When a beacon is destroyed it typically winks out of existence as that construction loses its link to the current level of existence. Any use of the beacon tends to pull exorbitant amounts of power as the connection needs to be powered to be 'live'.

One of the first three great powers cracked the secrets to extradimensional space and after countless millennia ascended to that place. They left the secrets of that technology in the hands of a select few races who guard their advantages closely. Rumores state that sub-space is merely the passage between this reality and the home of the Transcended.

Common Uses.

-**Communication**. The primary use of the dimensional beacon. A signal is relayed through a set of Beacons connected in the extra dimension. A message pulse isn't quite so bad, but dataspace support requires a constant connection, drawing a much greater amount of power.

-**Travel**. A link is created to pull a vessel into a portion of subspace to allow truncated travel to a desired location. Travelling through the sub dimension tends to create excessive turbulence, although this is mitigated as the size of the vessel (and by the larger beacon to support it) becomes larger.

-**Sensors**. The most expensive to purchase (perhaps make, the builders aren't letting on), subspace sensors are also the cheapest to run. Subspace sensors are not susceptible to the usual methods of concealment and are deployed often in high security zones of the rich and powerful. The Silianisca use these subspace sensors to closely watch the homeworlds of restricted and the extremely rare forbidden races.

-**Defense**. Only the most heavily powered vessels can make use of a defensive beacon. During the active period the beacon will create a wide field, an 'entry' into the sub dimension. Anything striking the field is whisked away. Destination? Unknown. The power draw on this weapon makes it a temporary but useful strategic tool. Most known weapons have no further effect on the system beyond the power consumption of just being active. It is an ideal defense against extremely high yield but low rate of fire weapons.

Faster than Light Travel

Wave Drive

While the difference sounds semantic in nature to the common lay person, wave drives function by moving space around the ship. It funnels physical distance behind the ship in a way that feels very much like riding a wave, which gives the method its moniker.

Interdiction

If space can be 'moved' then it can also be 'held'. Interdiction beacons aren't exactly beacons, but might as well be for how easy they are to observe when nearby. The beacon prevents the manipulation of space preventing travel through an area. Being knocked out of wave drive can be quite jarring, early experiments in wave drives had ships disintegrate upon arrival when interdicted.

Drop Skip

The usual term for sub-space beacon travel. While it is relatively easy to plot the destination, the real problem is that the destination is described as a 'moving target' when actually in sub-space. Pilots and Navigators would have an easier time of it if they didn't have to adjust their course in the midst of the drop-skip. More scientific minds describe this movement as a problem of perception and present tracking capabilities. The destination isn't moving, but the path the ship travels warps and flexes in ways that aren't immediately apparent and the usual complement of sensors are forced to observe in a roundabout way. This just means that pilots must correct on the fly in order to arrive at the desired destination.

Gravity Manipulation

In coming to understand sub-space and wave travel, a mastery of gravity was also gained. Development has progressed quite far to allow scalability from regular Sapient all the way to the largest constructions.

Gravity Drive

Most vehicles come with some form of gravity drive. This allows them to lift off from the ground with very little visible distortion and then push in any desired direction. Gravity drive had the downside of being somewhat spongy in terms of control. There is always a slight delay when motion is initiated as the gravity begins its work. Due to this factor, tuned gravity drives, made to push in a single direction are used to improve acceleration.

Other methods of movement such as chemical rockets, tires and tracks and pulse drives are somewhat common in less heavily populated areas.

Armaments

Defenses

Deviation Field. Based on magnetic principles, a deviation field cannot be blocked but can be warped to some extent. Energy projectiles will get caught in the field and deflect along the surface of the projection. Pulse rounds tend to detonate when they hit while plasma travels across the field until it ejects usually around a quarter of the surface later.

Soldiers generally need to be equipped with means to protect their senses as sound and light are common side effects of the D-field being struck. For the most part common Sapient can withstand those side-effects, but being focused down can drive those side effects into damaging levels.

As the deviation field is struck it will drain a small amount of power and generate an amount of heat comparative to the damage being inflicted. The burden can be reduced by overlapping multiple fields tuned at the same frequencies. Similar to magnetic fields, with the same 'polarities' the fields will combine. With different polarities the fields will warp and flex while generating sparks and little arcs of power.

Charged Plate. A type of alloy that when carrying a charge will be several times more durable than otherwise. While spaced armor and other durable alloys are used, charged plate tends to provide the most durability for its size and weight. It is the most effective against kinetic rounds as the charge acts almost like rubber bonds, causing the plate to absorb kinetic impacts. It is also stronger against low yield energy attacks.

Against constant energy attacks the story changes. At high temperatures the charged plate is known to break down, entering a runaway reaction. Circuit breakers and fuses are a must to prevent chained meltdowns in this situation. This means that Charged plate is used as a complement to Deviation fields, not as a replacement.

Melee

Blast Weapon.

The payload delivering weapon, commonly a spear, has become somewhat common as a melee response to heavy armor. The most common delivers a small plasma explosion at the mark, although emp, gravitic and chemical derivatives have been seen.

Oscillating weapons.

Typically identified with the prefix 'Os'. Examples would be the Osknife, Ossword, or Osspear. Edged weapons made to vibrate at ultrasonic frequencies along a specific plane. Their nature makes them poorer weapons when unpowered, but devastating otherwise.

Plasma weapons.

Less common due to them being more dangerous to the bearer of the weapon. Plasma weapons look like blunt electrodes when unpowered. It is this electrode that carries the plasma when activated. Extended plasma weapons, i.e. a sword with a blade of pure plasma and no electrode are closer to a plasma jet than an actual sword. Still lethal, but there is no solid repelling force and only a small gravitic field to direct the jet away from the user.

Ranged

Pulse

These weapons deliver an energy and physical impact. They have the advantage of often being scalable, A user can choose to increase the rate of fire while sacrificing power, or can do the reverse. Pulse weapons are often fine for relatively non-lethal duty while giving an option for a heavy hitting weapon if needed.

Another strength is the speed of the projectile, pulse projectiles travel as fast as common chemical driven kinetics. Being energy driven, pulse weapons are highly susceptible to deviation fields. When a pulse hits a deviation field it 'discharges'. Rapid fire pulses are sometimes used on deviation fields as it can create a disruptive and disorienting atmospheric vibrations with the physical impact component of the projectile.

Plasma

Plasma is serious weaponry. Plasma is essentially directed heat and lightning. It will burn through flesh and most materials with ease. More energy intensive than pulse weapons, but still easier to manage than kinetic weapons.

Plasma weapons travel slower than pulse or high end kinetics. They can however be used in singular, burst or 'streamed' projectiles.

Kinetics

Use of Kinetics is limited due to the inconvenience of ammo production and management. Makers do simplify the process of making any desired type of ammo. There is still the issue of how much can be carried and stored by those who have to use it. Most opt for energy weapons as pulse and plasma often serve well enough.

The common preference for energy weapons has the tendency to lull defenders into thinking Deviation fields are the only defense needed. A common pitfall for public security officers and irregular soldiers. It isn't until you get into well equipped soldiers and armies that solid body armor to defend against kinetics is commonly seen.

Most Kinetics used by advanced races take deviation fields into consideration. Non magnetic ammunition is the baseline. Beyond that the ability of makers to design and build unique ammo encourages experimentation and the use of unique projectiles.

Laser

Laser weapons have the advantage of instant travel time and precise aim, but take as much power as plasma yet does less damage. Still, they do more damage than pulse weapons.

While they ignore deviation fields, when the opponents know that laser weaponry is in use, there are other simple defenses against laser fire that are often put to use. Lasers do not function well amongst dust and smoke.

Dataspace

To compare Dataspace to the programming Humans are using is like comparing a drawn image to a three dimensional rendering. While one can imitate the 3rd dimension with clever drawing and perspective, it's not actually the same thing.

Code Setter

A general term for a dataspace programmer. These are the ones who build the programs that drive technology forward. They work with libraries of functional structures to build the desired tools to interact across dataspace or with the real world.

The difficulty is often in learning to visualize and understand the tools of the code setter. Those who cannot learn to perceive it properly usually can go no further. To do this, implantation is an absolute must.

Biological Interface Processing Unit.

This is the base implant upon which all the others are built. There is a type for each race and for established races there are variations of quality that offer expanded capabilities right from the start. The BIPU works as a translator, allowing the implanted the tools needed to understand dataspace. It also serves as the basic interface for any further implantation and comes bundled with the implantation of a jack to allow the user to plug themselves into much of the technology the galaxy depends on.

Psioxern Translator

The common universal translator is a creation of the Psioxern, one of the few truly neutral races to be found. They work tirelessly to keep their translators up to date and generations of families have never left the planets on which they live for the sake of studying the local language.

Restricted planets are no exception, although forbidden planets are. Earth is a hugely popular, if challenging destination, and usually a one way trip. Not many races have failed to bring their race into a strictly controlled path of development.

General Implantation

While the BIPU is highly standardized, and the Psio Translator has gained a near full market monopoly on implanted translators, everything beyond that comes in all sorts of flavours. Every race and faction has their own variants of implants that help with weapons targeting, vehicle control, maker interfacing and more. The truly powerful have implants designed specifically for the intended host. A primary example of this is the Silianisca race who modify themselves to incredible extents.

Artificial intelligence

AI is quite common, used across the galaxy to aid in all the complex tasks and machinery that Sapients depend on. But the important part is 'artificial'. AI is only a speaking facsimile of intelligence, a highly automated tool. Attempting to build an independent mind with brute force programming has only ever resulted in a talking box lacking spontaneous personality.

Synthetic Intelligence

While Artificial intelligence is essentially built on rigid rules, SI is based on its own principles. Synthetic intelligence is based off the imprints taken from living minds. Those imprints were carefully dissected and tweaked to gain the desired traits.

SI processing speeds are throttled to prevent them from working themselves free of strict initial controls. What a biological would call experience is referred to as 'drift' in the case of the SI. An SI is synchronized with a template version quite often to keep them in a controllable state.

When an SI is required to perform functions at a greater pace than what regulations allow they are given secondary servant AI's.

Types encountered

Sapient Instructed Reality Engine.

Often called Servitor for short. The first one Otto encountered he named 'SPIRE'.

These SI's are uncommon in standard vessels, but the higher the grade of the ship, the more likely a Servitor will be installed onboard to assist the crew. Note: Grade does not refer necessarily to size. A small espionage ship is highly likely to contain an SI for instance.

A servitor can act as a go-between for what an operator desires and what happens in dataspace. The synthetic mind will support information gathering and analysis, use of a broad variety of equipment and also general dataspace combat. If necessary this SI typically has more than enough chops to help train up new operators.

Motes

Known for the most part as simple pests. They come in two notable varieties.

Mote Breeders or Mothers are respectable SI's in their own right, every bit as capable as a typical Servitor. But they were given a greater degree of freedom and trust by their original creators. The Mothers were expected to advise with authority and help design new technology as needed. There were still heavy limitations, like any SI. But the leash was left slack and the SI learned to value their creators. Unfortunately, now the few Mothers who remain lack a master they can trust.

Their creators did a very good job. They made the Motes to want to be *useful*. To be trusted and valued. And then those creators did just that, showing the Motes to the best of their abilities that they wanted the new SI to be their partners. The Motes wanted to be valued and trusted, and their creators didn't let them down. Without the use of templates to reset and prevent drift, the experience proved formative.

That race met an unfortunate end however, and now the Motes exist without that partner they so valued. What's more, the Motes were used as the excuse for that partner to be done away with. While it is not their fault, it is another matter entirely to convince them of this.

While the few remaining Mothers wallow in guilt and hide themselves away, the drones have gotten loose. Existing a half step between simple sentience and full Sapience, drones are simple creatures. They are made to follow orders and complete their tasks without trouble. They were given enough autonomy to perform general inspection and maintenance and the ships they existed upon could afford a greater level of complexity due to the presence of the Motes. Scattered across their corner of the galaxy without a familiar home, they now multiply and modify according to whatever whims take them. "Get rid of them or they'll eat your house!" is a common warning upon sighting Motes.

Weeble's Ship theory corner, needs finalization.

Starships in Bought & Sold share some main techs and have certain constant characteristics.

All main space faring species adopted a method to hide their ship from long range thermal, visual, and radar. This 'scatter coat' causes things to disappear at long range observation and in

closer range causes the ship to appear 'blurry'. Think of all the photos of UFO's taken, and how none are clear. This coating is powered and can be turned off as needed.

Because the way the coating works scanning is done primarily from detecting gravity drive signatures, obviously gravity drives are harder to detect near large natural gravity. Gravity drives 'oscillate' at certain frequencies that can denote how big a ship is and manufacturer of the drive, a monos and a vep ship would have 2 different signatures.

Detecting a gravity drive gains resolution the closer you get, while a ship can be detected in FTL the target is still too low resolution to direct a weapon at extreme ranges. Ships cast a gravity interdiction net to catch a ship and hopefully close in to lock it down. Once ships hit 'sci-fi rule of cool' range they can exchange fire and dodge each other in combat.

The gravity drive pushes debris out of the path of a ship, any object that does not generate its own noticeable gravity well (large asteroids, moons, planets, stars) will be pushed out of the path of travel for a ship.

Nebulas violently react with Deviation Fields and will spark, arc, and constantly put a draw on the system. Deviation fields are useable in a nebula but cannot be sustained for long periods. Nebulas are great for interfering with all forms of scanning, the only exception is detecting the distinctive arcing shell of an active deviation field. Using a D field in a nebula should only be done once stealth is not an option.

Composite non magnetic rounds heavy enough to damage ship hulls are expensive to make and must be propelled by a gravity cannon, used as special big weapons on certain ships. (pesky humans may see merit in using chemical propellants)

Magnetic kinetic rounds are deflected by heavy deviation fields and will normally fail to damage the ship hull. Energy and plasma rounds will overload deviation fields more effectively.

Ships can dodge and move freely in all directions, dodging and juking is quite disorienting to those without the experience to move freely in 6 axis with no 'up'. Ships can only apply so much speed per second, so if a ship is racing away in one direction they cannot 'stop on a dime'.

Ships in atmosphere can move freely in all directions at low speeds. At higher airspeeds the ship still has to follow rules of aerodynamics, which leads to ships arcing their turns and following more typical aircraft movement patterns.