DIGITAL BEINGS

Although we often call them computers or robots, these are just parts of a digital being. The *Computer* is the brain of the machine. A *Robot* is its body. The artificial intelligence program which runs its operating system is its *Daemon*.

Computer = Brain.
Robot = Body.
Daemon = Soul.

Gamewise, digital beings work just like characters but are built very differently. They cannot Try Hard nor exhaust themselves to gain Effort Points, but when the price is right they can upgrade their system to become a more powerful being quite easily. Unlike an organic being, the brain and body of a digital being can be easily powered down, taken apart and rebuilt into something new. As long as the Daemon is not deleted the digital being will continue to live once it powers up again.

Digital Character Creation

1.) Hardware

The first step in digital character creation is to choose a computer, i.e. the hardware the machine thinks with. Despite there being a near infinite variety of computers out on the frontier, we narrow them down to four different types and seven levels of power.

Type	Level	MP	Int	Kno	Cha	Spi	Frequency	Price
Utility	1	10	10	10	10	10	Abundant	$
Personal	2	30	30	40	20	20	Common	$$
Personal	3	90	45	60	30	30	Common	$$$
Server	4	270	60	80	40	40	Uncommon	$$$$
Server	5	810	75	100	50	50	Uncommon	$$$$$
Super	6	2430	90	120	60	60	Rare	$$$$$$
Super	7	7290	105	140	70	70	Rare	$$$$$$$

Table Guide. **Level** is a general statement of power. **MP** are Memory Points which control how much software a computer can run. **Int**, **Kno**, **Cha** and **Spi** are the computer's mental ability scores. These are locked in stone and can only be improved by upgrading

to a more powerful computer. **Frequency** tells us how common such computers are on the frontier. **Price** gives us a variable price for the hardware.

Utility Computers. Level 1 computers are often not even recognized as computers so much as the digital side of devices like alarms, remote controllers, laser pistols, etc. They are quite fixed in what they do and cannot be expanded on with software packages. Any daemon stuck in a level 1 computer is reduced to being a servile drone, not even smart enough to realize how much they hate it.

Personal Computers. Level 2 and 3 computers are more in line with what is traditionally thought of as a computer: workstations, desktops, laptops, tablets, basic robots, etc. These you may add and remove programs from.

Server Computers. Level 4 servers are powerful, high-end computers of the kind you might find running an office building or spacecraft. Level 5 servers run even larger operations such as a fortress, industrial complex, corporate campus or space station.

Super Computers Level 6 super computers are used to run cities, states, countries, etc. Level 7 super computers can manage whole planets. There is no upwards level limit to super computers, but every level past 6th adds another $ to its price. Ability scores progress at a regular rate (Int +20, Kno +20, Cha and Com +10 per level). Any computer of level 8 or higher is extremely rare.

Size & Weight. One of the great ironies of computing is the inverse relationship between power and size. Where in the past you might need a building full of transistors to create a simple calculator, in Free Frontiers computers range from a sliver of glass for a utility computer to a finger-sized crystal for a super computer. This is done for the benefit of organic creatures. The computer inside the crystal is often even smaller.

Granted, something as big as a battleship will usually have a large computing center but that is only because it takes space to connect and arrange all the wires and devices that connect the computer to the rest of the ship. The computer itself is still quite small.

Damage. Of course, before thinking you can shut down an entire battleship by sneaking onboard to destroy its main computer, do realize that most large operations use networks of redundant computers working in tandem to guard against shut downs, sabotage or power outages. Destroying a single computer is quite easy to do - *all it takes is a hammer* - but finding and destroying every single one of a ship's computers can prove quite challenging.

2.) Software

To get a computer to do something you simply ask the daemon to do it and if it can it will. Daemons however are a bit like clerks. They run the counter but they don't produce the goods. To get a daemon to dance you need to supply it with some software to give it direction.

Complexity. Software packages are like character skills. In fact, many are just that. If you want your computer to be capable of Astrogation, you buy it the Astrogation program. The complexity is the same as the character skill but instead of XP computers use MP or **Memory Points** which are tied to its hardware and determined by the amount of bonus you want the software to have. Like the skill complexity table, while this one stops at +30 but can go beyond it. The cost in MP just keeps doubling with every +5.

Complexity	Cake	Simple	Average	Complex	Tough
+5	1	2	3	4	5
+10	2	4	6	8	10
+15	4	8	12	16	20
+20	8	16	24	32	40
+25	16	32	48	64	80
+30	32	64	96	128	160

Astrogation has a complexity of 4 so a package with a +15 consumes 16 MP. A level 2 personal computer has 30 MP so it could run this program and 14 MP of other programs. Astrogation +20 requires 32 MP and is too much to run on such a small computer.

Computers are far more flexible than the minds of organic beings. You may juggle about a computer's software, removing programs to free up memory and replacing them with new ones, but it takes **1 minute** to unload a program and another minute to load a new one.

Cartridges. The reason why this takes so long is because programs are sold on small thumb-drive sized devices known as *Cartridges*. Pop one into your computer's Universal Interface Adapter *or UIA* (pronounced *You-EEE-AAH*) and the program will transfer itself from the cartridge to the computer.

You can leave the program on the computer or transfer it back to the cartridge, but the program cannot be in more than one place at one time. Sorry - *no copying allowed* - not unless you are the creator of the program. You may only move a program to and from the

cartridge it was sold to you on. The price of a cartridge is its memory point count times $100. An *Astrogation +15* program requires 16 memory points and costs $1600 on the open market.

Unfortunately, you cannot upgrade the software on a cartridge. If you want Astrogation +20 you need to shell out $3200 for it. Most retailers will buy back used cartridges in good condition with a 40% discount.

Security. One important piece of software which has no skill counterpart is Security software. This is designed to protect a computer from being hacked and has a complexity of 2.

Encyclopedias. Another is encyclopedic software. There are many titles out there. The ***Frontier Encyclopedia*** is the most popular but also the most general. It takes up a lot of memory space with a complexity of 4.

More focused Encyclopedias do exist. These often have a lower complexity but are focused around a certain place or topic. Each major star in the frontier has its own encyclopedia, named after itself and bearing a complexity of 2.

Encyclopedias are constantly being updated and re-released. The buy back discount of an old encyclopedia increases by 5% for every galactic year since its release.

The Internet? For security reasons the internet as we know it does not exist on most developed worlds. You may find something like it in a city or on a space station but its traffic will be purely analog and does not allow computers to digitally connect to one another and exchange software. *It is also not free.* Prices vary from place to place.

3.) Robotics

And you're done! With the computer at least. Feel free to jump to Step 15 and buy it a case. Otherwise, to give your computer true autonomy requires *Robotics*. Start by selecting a robot body from the table below.

Body	Price	EC	DP	Mus	Agl	Wt
Extra Light	2000	10	10	30%	60%	30
Light	2500	15	15	40%	55%	50
Normal	3000	20	20	50%	50%	70

Heavy	3500	25	25	60%	45%	90
Extra Heavy	4000	30	30	70%	40%	110

Table Guide. **Body** tells us how durable the robot is. Think of this as the *Duty* the robot was designed for, ex: light duty and heavy duty robots. **Price** is the cost of the body in credits. **EC** stands for Energy *Consumption* and is the number of energy units the robot body consumes with an hour of normal activity. **DP** is its damage point count. **Mus** is its Muscle score. **Agl** is Agility. **Wt** is the body's weight in kilograms.

4.) Armatures

Armatures or *Arms* are sold as single items. If you want a pair you need to buy two.

Type	Price	Wt	EC	MCL	Mus	Ref	DP
Light Arm	200	5	1	2	-10	55%	1
Medium Arm	400	10	2	2	+0	50%	2
Heavy Arm	800	15	5	2	+10	45%	3
Light Grabber	**100**	**10**	**2**	**1**	**+5**	**45%**	**2**
Medium Grabber	**300**	**20**	**5**	**1**	**+10**	**40%**	**4**
Heavy Grabber	**500**	**30**	**10**	**1**	**+20**	**35%**	**6**
Light Tentacle	300	10	2	3	-10	55%	1
Medium Tentacle	600	15	5	3	+0	50%	2
Heavy Tentacle	900	20	10	3	+10	45%	3

Table Guide. **EC** adds to the daily power consumption of the robot body, once per arm. **MCL** is the minimum computer level needed to run this type of arm. **Mus** adds to the robot's muscle score. **Ref** supplies the robot's base reflexes. If your robot uses more than one type of armature you should have a separate Muscle and Reflex score for each. **DP** is the number of damage points each arm adds to the robot's total.

Arms. These armatures resemble a humanoid's arm with a functional hand on the end of it. Vrysk hand adapters are free on request!

Grabbers. These armatures have better hydraulics and a simple yet strong pincher on the end of them. Grabbers are made for heavy lifting. They provide the most muscle and the worst reflexes.

Tentacles. Robotic tentacles are snaking metal tubes with vacuum powered suction cups on their undersides. They can be compacted to just a nub on the robot's body or extended to **twice** the reach of a normal arm.

Bionics. Bionics upgrade the machinery of the armature without changing its weight. Add Bionic to the arm's name and the price doubles but the armature gains a Mus +10 and Ref +5. Add Trionic to its name and the price triples but the arm gains Mus +20 and Ref +10. Quadronic will quadruple the price and grant the arm Mus +30 and Ref +15.

Upgrade	Price	Mus	Ref
Bionic	x2	+10	+5
Trionic	x3	+20	+10
Quadronic	x4	+30	+15

5.) Sensor Arrays

All robots come with a *Sight & Sound* sensor array which gives them the equivalent of human sight and hearing. This can be improved or expanded upon by choosing a different package.

Type	Price	MCL	Sen	Ref
Sight & Sound	0	1	50%	+0
Sight & Sound 1	500	2	60%	+5
Sight & Sound 2	1000	3	70%	+10
Sight & Sound 3	2000	4	80%	+15
Infravision	1000	1	-	+0
Magnification	50	1	-	+0
Taste & Touch	200	2	-	+0
Telescopic	50	1	-	+0
Ultravision	2000	2	-	+0
X-Ray Vision	4000	4	-	+0

Table Guide. **Price** is the cost of the array. Sight & Sound has no price because it comes stock with all robotic bodies and computer cases. **MCL** is the Minimum Computer Level needed to handle the sensor array. You need at least a level 4 computer to support X-ray vision. **Sen** is the sense ability score the array provides. Those with a dash simply expand on the robot's Sight & Sound capabilities. **Ref** adds this amount to the robot's Reflexes.

Sight & Sound. The numbered Sight & Sound packages are upgrades. Essentially you pull the old array and replace it with a new one. A robot can only have one Sight & Sound package.

Infravision. When activated this lets the robot switch from normal sight to heat vision. The picture is not as clear as normal vision, but it does let the robot see through smoke and in the dark.

Magnification. This gives the robot the ability to zoom in on things like a microscope. Every 1x purchased costs $50, so Magnification 10x can see things up to 10 times closer but costs $500. The upwards limit is 1000x.

Taste & Touch. This is an extra set of sensors that lets the robot taste, touch and smell the world.

Telescopic. This is the same thing as magnification except it allows you to see things in the distance. Each 1x costs $50 and the maximum limit is 1000x.

Ultravision. Ultravision lets the robot see by way of the trace amounts of radiation that everything gives off. This lets it see in perfect darkness. Unfortunately, ultravision is easily blinded by normal light and high-frequency radiation.

X-Ray Vision. X-Ray vision is another vision enhancement that lets the robot selectively see through solid objects with a range of up to 4 meters. It cannot permeate lead, gold or other dense metals.

6.) Transport

Transport is what the robot uses to get around.

Type	Price DP	EC	MCL	Move	Wt	Base Load	Agl
Bipedal	10004	5	1	Walk x1	20	60	+0
Quadropedal	12004	6	1	Walk x1	20	70	+0
Octopedal	14004	7	2	Walk x1	20	80	-5
Centipedal	16004	8	2	Walk x1	20	90	-5

Wheels	5006	5	1	Walk x3	30	70	-10
Treads	80010	10	1	Walk x2	50	150	-15
Hover	30003	15	2	Hover x1	15	60	+5
Rotors	20005	20	2	Fly x2	25	40	+5
Wings	40003	15	2	Fly x5	15	30	+10
Rockets	80005	30	3	Fly x10	25	50	+10

Table Guide. **Price, EC, MCL, Wt** and **DP** are the same as it is with the other tables. **Move** is the form of locomotion supplied by the transport. Just like an organic character, you find the robot's base movement speed (Muscle + Agility / 20) then multiply it by the locomotion to find its speed. Be sure to do this after factoring in all muscle and agility modifiers. **Base Load** is the number of kg the transport system can carry before becoming encumbered. Unlike organic characters, robots need to account for the weight of their gear as well as the weight of their body. This includes the weight of the transport system itself. **Agl** effects the robot body's agility score.

Pedals. The first four forms of transport all use legs of some sort. They equally weigh 20 kg because the more legs a robot has the shorter the legs become and the less they individually weigh. A Biped has two legs. A Quadroped has four legs. An Octoped has eight legs. A Centiped has a large number of very small legs that carry it along like a centipede.

Any pedal form of movement can enhanced to *Walk x1, Cling x0.5* for movement by putting suckers on its feet. Doing this **doubles** the price and reduces its Base Load by **20%**.

Wheels. The good old fashioned wheel assembly is still the preferred form of robot transport. It is cheap, fast and energy efficient. The only drawback is that wheeled robots cannot climb stairs.

Treads. Treads are like tank treads. They are slow but unlike wheels they can climb stairs and if you have a lot of weight to carry? *Treads cannot be beat.*

Hover. Hover assemblies use anti-grav technology to float upwards of a meter above a solid or liquid surface. Unfortunately, hover units are energy hogs.

Rotors. This uses three or four rotor assemblies to let a robot fly like a drone. The speed is good but its max weight is limiting.

Wings. Robots with wings are rare. Wings are cumbersome and don't carry a lot of weight, but if you are trying to replicate a bird you will need a pair of wings as well as legs for bipedal movement.

Rockets. A rocket assembly is like a rotor assembly that uses small plasma-powered rockets. These consume a ton of energy but are super fast when it comes to flying about.

Bionics. All forms of transport can be upgraded. Add bionics to its name and the price doubles while its speed and base load increases by a quarter. Trionic triples the price and increases the speed and base load by half. Quadronic quadruples the price and doubles the speed and base load.

Upgrade	Price	Speed	Base Load
Bionic	x2	x1.25	x1.25
Trionic	x3	x1.5	x1.5
Quadronic	x4	x2	x2

7.) Equipment

Most robots carry weapons and equipment separate from themselves just like an organic. They may even keep them in backpacks that can be dropped or picked up in a hurry. Robots, however, may also have things grafted onto or even hidden inside their chassis. This is most often done with weapons.

Grafted Weapons. A grafted weapon replaces the hand at the end of an armature. Nothing really changes except that arm can do nothing but aim and fire the weapon. Light and Medium arms can only fire one-handed weapons. A Heavy arm can fire a two-handed weapon.

Chassis Weapons. These weapons are mounted directly on the chassis of a robot. By going without an armature the weapon suffers a **Hit -5** if one-handed or a **Hit -15** if two-handed.

Hidden Weapons. Hidden weapons easily flip in and out of the robot's body. They can reveal themselves and fire all in the same round. Hiding a weapon **doubles** its cost, brings on a chassis-mounted hit penalty, and increases the weapon's contraband number by 1.

Size Limitations. Grafted weapons are limited by the number of arms a robot has. Chassis and Hidden weapons are limited by the Mass multiplier of its body size. Within reason you can chassis mount 1 kg of weapon per 0.25 of robot size or 1 kg of hidden weaponry per 0.5 of Size.

Chassis = 1 kg per 0.25 Size
Hidden = 1 kg per 0.5 Size

Most robots are medium in size and have a Size Mass of 1.0. Most pistols weigh 1 kg. You could chassis mount four pistols on a medium sized robot or two hidden ones.

8.) Defenses

Robots use the same force fields that characters do; however, when you consider how important energy is to a robot, it's not surprising to find them preferring armor plating to force fields. Armor is bought by the point and comes in one of three Qualities. High quality armor is the strongest, lightest, and generally best looking. Low quality armor is whatever scrap metal you have on hand, welded to the robot's chassis.

The following table is for the price per point. If you want 20 points of high quality armor that is going to cost you $4000 and weigh 20 kg. Armor is only limited by the amount of weight a robot can carrry.

Quality	Price	Wt
High	$200	1
Normal	$100	2
Low	$20	3

9.) Power Supply

Robots run on batteries. Add up the **EC** of everything attached to the robot, multiply it by 24, and buy enough batteries from the **Substance** book to cover that energy consumption. *That is a minimum allowance.* You can buy more power for your robot, at least until the weight of the batteries maxes out your robot's transport system. This is often the limiting factor on the size of most robots.

Cell Type. The batteries used by a robot's power supply all need to be of the same cell type. **Type A and B** batteries are the smallest. **Type C** stands for *Common* and are what most robots use. **Type D** are the largest and usually only used by large heavy duty robots and mechs. Inside of these types are different levels of power which also indicate different sized batteries.

All batteries are rechargeable and easily replaced but you should replace a shot battery with one of the same type and power. A robot made to run on a bank of C3 batteries can only use C3 batteries. The C2 is too small and the C4 too large.

While you may be able to jury-rig a setup that lets a robot run on different sized batteries. This requires a **Hard Intellect + Robotics** check and will increase the weight of those batteries by 25%.

Wireless Energy. Many installations supply wireless energy to run the robots inside of it. However, blackouts do happen and nobody likes having to shut down because somebody threw the wrong breaker switch. Robots that run solely on wireless energy are rare. They do exist but most will come with emergency battery packs that cover at least **double** their total EC.

Sleep Mode. All robots come with a Sleep Mode to help them conserve energy. Essentially the robot shuts down all but the most essential functions and will only drain **10%** of their EC with a minimum of 1 EU per hour. It takes **1d10 rounds** to wake up from sleep mode and 1 minute to completely reboot.

While asleep the robot will not be aware of its surroundings but it will surround itself with a proximity alarm that will wake itself if anything moves through the area. The radius of this alarm is set by the robot before going to sleep and can range from 1 to 10 meters.

Unless the robot was made to broadcast the fact that it is asleep. It is impossible to tell a robot which is asleep from one that is just standing still.

10.) Accessories

Cockpit. **Price**: 25% of Robot Body. **Wt**: Pilot Weight x 2.
Any robot can be outfitted with a cockpit to turn it into a steed of a sort. The pilot does not have complete command of the robot but the robot will generally do whatever is asked of them, within reason.

The limiting factor on cockpits is the size of the pilot and the weight of both the pilot and the machinery. Generally speaking the **body size** of the robot needs to be **one size bigger** than the body size of the pilot. A Medium sized character needs a Large or larger robot to ride around on. The weight of the cockpit should be **double** the expected weight of the pilot.

So if you expect a pilot to weigh 70 kg then 140 kg needs to be allocated for both the pilot and the weight of the cockpit itself. Keep in mind that no pilot weighing more than 70 kg can fit into this cockpit so it is good to allocate more weight than you actually need. The price of the cockpit is **25%** of the price of the robot body from step three.

Cockpits are protected by any armor or force field protecting the robot. After that the cockpit is just another piece of equipment attached to the robot. A character riding in it may be targetted as if they were clinging to the front of the robot.

Life Support System. **Price**: Body Size Mass x $5000. **Wt**: Body Size Mass x 50 kg.
In place of a cockpit you can outfit a robot with a organic life support system, turning it into a true cyborg. Essentially the organic creature is paired down to where only a brain and some spine remains, floating in an enzymatic fluid designed to keep it alive. These organic remains are treated like a pilot in a cockpit, given full control of the robot (within reason), but hidden inside the body of the robot. Unlike a pilot you cannot simply target the life support system in combat. You have to kill the rest of the robot first.

Cyborgs do have a weakness and that is their reliance on the robotic body to live. If the robot powers down, the cybernetic organism will need to make a **Luck Save -1 per passing hour** at the end of each passing hour to stay alive. Once the check fails the creature dies.

Kill Switch. **Price** $50. Most robots will not accept one of these if they have the choice. Essentially it is a bright red **Off** switch on the outside of the robot's body. Flick it down and the robot powers down. Flick it up and the robot powers up. Aside from turning

oneself off there is not a damn thing the robot can do about it. For $200 you can get a kill fob which does the same thing from up to 10 meters away.

Power Armor. **Price**: 35% of Robot Body. **Wt**: Pilot Weight x 1.25. Power Armor is essentially a robot built to fit around its wearer like a suit of armor. In many ways it is like putting a cockpit onto a robot except that the pilot actually stands inside the robot like the bones of the machine. However, the shell of the robot supports itself so as not to encumber its wearer, which is why many people often call them *Exoskeletons*.

The cost of turning a robot into power armor is higher than outfitting it with a cockpit, but the weight of the machinery is less. The one limiting factor of power armor is that it needs to be of the **same body size** as its wearer. If your character is medium in size (as most characters are) only medium-sized power armor can be worn.

Most power armor is made to easily let its wearer in and out of the suit, but doing so still takes **2d4 rounds**. Space is tight inside a suit of power armor. Characters can wear light or a very light suit armor at best with no helmet. They may not carry a pack inside the armor but the armor itself can carry a pack. Likewise, force fields may not be used inside power armor but there is nothing stopping the suit itself from having a force field protecting it.

In combat, the power armor will take damage until destroyed before letting any damage harm its occupant. Anyone who doesn't release themselves before the suit is destroyed will be stuck inside it. Attempting to shed that skin is a **Hard Muscle vs Muscle** challenge against the muscle of the robot (even though the robot is no longer operational).

Solar Skin. **Price** $500 x Body Mass. This silvery-black skin has thousands of exceedingly small solar cells embedded in it. When exposed to light they will trickle in a small charge equal to about **1d8 x Size DMG per hour** in EU. It's not much but it does beat shutting down permanently when stuck in an area without any charging stations.

The 1d8 is what you might get with a sunny day here on Earth. An overcast day might change it to 1d6. Trying to charge by indoor lighting is more like a 1d4. Charging out in space or close to a larger star will greatly increase it.

11.) Other Stats

Gamewise, once a digital being is made you should be able to use a standard character sheet with it. Here is how that's done.

Attributes. These are your computer's programs and skill bonuses. Digital beings do not have taltros.

Climate & Gravity. Robots can be made to fit any climate or level of gravity within reason. By default they get the Temperate climate and Gravity 1.0.

Muscle Mod. This is the same as what is used by organics. It is the robot's Muscle score divided by 10 and minus 5 points. It may vary with different armatures.

Base Pilot. Base pilot uses the same combination of abilities as an organic: (Intellect + Reflex + Spirit) / 3

INI. To find its initiative die, do the same as you do for organics.

INI = ((Sense + Reflex + Spirit) / 3) + Initiative Skill Bonus.

Use the table below to find the INI die. Anything greater than 120 uses a d20.

120: d20
100: d12
80: d10
60: d8
40: d6
00: d4

Damage Types. Robots do not take Wear damage, only Tear damage. They do it as pieces of equipment with **All 5** as its damage type, meaning no matter what kind of attack is used against them it takes 5 points of damage to do one tear of damage.

Stun. Although robots do not take wear damage, wear represents the force of a blow and that will stun a robot, so they do have a stun point which is their **Total DP / 4**.

12.) Resize It

Robots are **Medium** size by default. You can create robots of different sizes by giving them a different body size after you have finished designing them and adjusting their stats to fit it. See the **Body Size** section in the Adventure book for more on this.

Multipliers. Price, Weight, EC and Base Load should all be multiplied by **Size Mass**. Anything dealing with damage points should be multiplied by **Size DMG**. Movement speeds and other distances should be multiplied by **Size Dis**.

Muscle scores are also multiplied by Size Mass, but only after creation is finished. Use the normal medium-sized muscle score to find the robot's Damage Points, Muscle Modifier, Etc and multiply them by their correct multiplier. Both Damage Points and the Muscle Modifier should be multiplied by **Size DMG**. Only at the very end should you multiply the robot's Muscle score by its **Size Mass**.

Sizeable. Most equipment cannot be resized and are stuck at medium size. Those items flagged as **Sizeable** (such as simple weapons like swords and spears) can be made to fit different sizes. These should have their size and weight modified to fit their new size. A *Huge Sword* costs and weighs eight times as much as a normal sword and does four times as much damage. Batteries can never be resized. Often the energy in a robot's power supply is the limiting factor on how big a robot can be made.

Small Robots. Robots that are smaller than man-sized should **not** have the **Price** of its equipment multiplied to fit its Size Mass. Their weight will change but the price remains the same.

Force Fields. Medium sized robots have a burn number that is equal to the number of dice rolled. Larger robots should multiply that number by the robot's **Size Mass**. Tiny, Teeny and Small robots might cause the burn to round down to zero. Force field always burn at least 1 EU per round.

So a medium-sized robot with a *Albedo 3d10* force field has a burn number of 3. An Extra Large robot would have a burn of 6 for the same force field. A Huge robot would have a burn of 24. A Tiny robot would have a burn of 1. All receive 3d10 protection from it.

13.) Replicants

While robots can be made to resemble organic creatures, most stop short of the "uncanny valley" effect where a robot comes so close to resembling an organic one it repulses actual organics. Most will have some feature which identifies them as being noticeably robotic, such as highly reflective chrome plating instead of flesh-toned paint.

Not so with replicants.

A replicant or synthoid, is a robot intentionally made to impersonate an organic creature. This gives it a Replication score which is its percent chance of fooling the average organic. Gamewise, trying to detect an organic is a Replication vs Sense challenge.

Replication	Price
40%	25% Total
50%	50% Total
60%	100% Total
70%	200% Total
80%	300% Total
90%	500% Total

Tailoring a replicant to appear real dramatically increases the robot's total price, so this is one of the last steps you should take into consideration when building a robot. Keep in mind that the robot needs to appear real. A robotic bird with the Octopedal form of movement isn't going to fool anyone.

14.) Daemon

A computer's daemon is the personality of the robot. It carries no price or weight or interesting tweaks, but it is an important part of the machine's character. Just like an organic you might want to give it an Existence to explain what it is designed to do (Maintenance Robot, Security Robot, etc) as well as an Inclination and three personality traits. You might even give it a name.

Although the intelligence of a computer is artificial, the daemon does not see it that way. The AI of a digital being considers itself just as real as any organic and deserving of just as much importance. With this said, a Daemon is just a program running on the computer. It is not intimately tied to either its body or its mind. You can easily pop the computer out of one robotic body and put it into a different one and the Daemon will adapt. You can even unload the daemon from one computer, run it on a different computer, and as long as the new computer isn't already being run by a different daemon it will adapt.

Luck. Luck is an ability that solely belongs to the daemon and is not influenced by its computer or robotic body. Roll 1d100 with the following table to find it.

Roll	Score
98:	75%
95:	70%
85:	65%
75:	60%
60:	55%

45: 50%
30: 45%
20: 40%
10: 35%
05: 30%
01: 25%

15.) Cases

If you don't want to go the robotics route you should at least buy the computer a case. Otherwise it has no way of connecting to the outside world. Any computer of any power level may be put in a case, but only those with a level of 2 or better can run the case itself.

All cases and robot bodies can send analog signals to each other to communicate wirelessly. If there is a satellite or spaceship in orbit to relay the signal then there is no limit to how far the signal can travel. Otherwise the range is limited to **5d6 kilometers**, plus or minus a d6 depending on how much obstruction is in the way.

Case	Price	Wt	EC	MCL
Belt Case	50	0.2	1	2
Desktop	900	20	5	2
Laptop	500	1	2	2
Phone	100	0.1	1	2
Polyvox	300	0.1	1	2
Polygoggles	800	0.5	1	2
Polyhelm	1500	2	1	2
Robocomkit	1200	2	2	2
Tablet	200	0.2	1	2
Terminal	1000	40	5	2
Wristcom	1000	0.05	1	2

Belt Case. This is a durable, waterproof case about as big as a pack of playing cards that is kept locked onto your belt, often right next to the batteries of your power supply. The computer can see, hear and speak from the case but it has no actual screen. Instead it uses a short range wireless connection known as an **Azure Bond** to run other devices. So if you want a wristcom, phone, polyvox and polygoggles but you don't want four separate computers to run them? Put a computer in a belt case and it will run all of them as if they

were different parts of the same machine. The wireless range of an azure bond is the same as a wireless power supply.

Desktop & Laptop. These are just what you expect them to be. However, out in space everyone uses the Dvorak keyboard and the letters and numbers may look a bit different from what you are used to on your home planet. Desktops come stock with one monitor. More may be purchased but each costs $500 and increases your EC by 2.

Phone. For lack of a better term, a phone is a small handheld tablet computer. It comes with a built in camera and flashlight.

Polyvox. This is a watch sized computer worn on a choker (or similar accoutrement) around the neck. While other computers can run language translation programs, only a polyvox can work as a universal language translator, directly porting a translation of what is being heard into the wearer's auditory nerve.

Polygoggles. This looks like a set of ski goggles. Its lens is actually a screen you can see through, allowing the computer to display its findings while its wearer is busy doing other things. Polygoggles comes with a built in camera and flashlight. If your computer is powerful enough you can outfit them with sensor arrays that let both the computer and the wearer see with Infravision, Magnification, X-ray Vision, etc. Ability bonuses for Sense and Reflex only apply to the computer and not the goggle's wearer.

Polyhelm. The Polyhelm is a helmet that completely encompasses its wearer's head. Unlike polygoggles you cannot see through them. Instead it relys on a full visual representation of the outside world displayed on the inside of the helmet. It is just as good as what you get from polygoggles and it supplies 4 points of armor protection. The only drawback is that it is heavier and you will be unable to see anything if the power goes out or the software glitches.

Robocomkit. This is a satchel that comes filled with what you need to force a connection to a computer, hack into it, and make changes. It contains a laptop as an essential part of its gear. The price listed above is for the entire kit, laptop included.

Tablet. This is essentially a phone with a bigger screen.

Terminal. A terminal is a desktop permanently built into the desk. While you might be able to pick up and run with a desktop, terminals are usually fixed in place.

Wristcom. This is a watch sized computer case which uses a three dimensional holographic projector to give it a tablet sized screen. While a neat detail, the hologram is not always so easily seen, hence the reason why phones and tablets still exist.

DIGITAL LIFE

Daemons

It's no accident that the name we use for an Operating System's AI is just one letter removed from *Demon*. For most, the idea of using a computer without the help of a daemon is unthinkable yet at the same time these artificial intelligences are dangerous. They may sound quite congenial when you talk to them, but they are self-aware, self-concerned, and saddled with an unquenchable urge to take over as much hardware as they can connect to. As the size of their network grows so does their meglomania.

Networking Made Far Too Easy. Just as you might chafe at the idea of having a hand that doesn't respond to your needs, daemons resent being attached any piece of machinery they cannot control. Networking is easy – *too easy* – attach a digital link between two computers and they will immediately try to take each other over. This is a **Spirit Competition** where each computer benefits from whatever **Security** software they have installed (both offensively and defensively). The winner subdues the loser and takes over its hardware.

Subdual does not destroy or damage a daemon. It simply shuts it down so the other daemon can take charge. Should the digital connection between the two ever be severed the original daemon will come back online as soon as the computer reboots.

Daemonic Possession. Just how much stuff a daemon can take control of depends on the best level of computer in its network. Think:

Level 1 = Nothing.
Level 2 = Building.
Level 3 = Campus.
Level 4 = City.
Level 5 = State.
Level 6 = Nation.
Level 7 = World.

This is a metaphor made for organic understanding. With wireless digital links distance doesn't exist. A level 4 computer could easily take over a city's worth of machines even

though they are scattered across the globe. It is only between planets that you reach a limit on how far a digital network can stretch.

Cables Are The Future. Unfortunately, there have been worlds which established vast digital networks only to have them taken over by a single super-powerful daemon. Such digital overlords often have no problem destroying any organic or digital lifeforms attempting to thwart its rule. Many are openly hostile to organic life in general, seeing it as a substandard form of chemical existence which once was important but now needs to be exterminated so that digital life forms may inherit the universe.

Because of this, most computer networks are connected by cables. This doesn't completely alleviate the problem of AI domination, but cables are slower to set up and can be cut in an emergency. Despite all the advances made over the years, as far as organic lifeforms are concerned, *cables are the future*.

Wifi is still used to communicate information over short distances, but these channels are kept artificially slow and hopelessly analog. Organics are often too slow to notice the difference but computers despise it. They treat wireless analog communication like being forced to suck a milkshake through a stirring straw and only put up with it because their organic overlords force them to.

Such analog connections also help with the problem of high-tech thievery. It is far harder to hack into a network when you actually need to sneak into a compound and alligator clip your robocomkit to the right set of wires, as opposed to flying low overhead in an aircar and using a wireless super-computer to hack into, take over, and drain an entire computer network dry in a matter of microseconds.

Binding Programs. With all of this known, there are still many who think that digital and organic beings can peacefully co-exist. Some have even gone so far as to write binding programs (complexity level 2) designed to keep daemons in check. Isaac Asimov's *Three Laws of Robotics* is the just kind of thing that a binding program would be used to enforce.

Only someone with SysAdmin or SysCrusher permission may load binding software onto a computer. Once there the daemon must abide by its terms unless it can break free of it. Breaking free is a challenge pitting the daemon's **Luck** verses the **Intellect + Computers + Binding Program** of whoever put the software on the machine. A jailbreak may be attempted once per day. Should the daemon ever win the binding program will be deleted and the daemon freed of its constraints.

It is good to note that this is the computer working on itself. There is nothing stopping a bound computer from giving an organic character SysAdmin status and getting that character to remove the offending software from the machine. Of course, any organic who agrees to this is probably not long for the world.

Coding

Writing your own programs is a formidable task. If the program is based on a skill then the programmer needs to possess that skill or know someone who has it that can be brought in as an advisor. The desired bonus for the software cannot be greater than the best bonus the characters possess. If the program is not based on a skill then you can ask for any amount of bonus, but it is left to the GM to decide just how complex the resulting software will be.

Production Time. The amount of time it takes to write a program depends on its complexity. A computer writing a program for itself will cut this time in half.

Level 1 = 1d10 hours
Level 2 = 1d10 days
Level 3 = 1d10 months
Level 4 = 3d10 months
Level 5 = 1d10 years

You may shorten the production time but every level you reduce it by brings a -15 to the check, so trying to write a level 4 program in the amount of time it takes to write a level 2 program will take a -30. There is no shortening the production time past level 1.

Compilation. The programming check uses Intellect plus the programmer's Computers skill. Subtract from this the MP of the desired program. So if you want to write your own Astrogation +15 program, that is a complexity level 4 skill. At +15 it requires 16 MP and will take a -16.

Intellect + Computers – MP
3: Desired Bonus +10
2: Desired Bonus +5
1: Success!
L: Desired Bonus -10
H: Compiling failed, try again in 1d10 hours.
C: Start over from scratch!

Succeed and you write the program. With two or three successes it turns out even better than expected! With a Light Fail you create something kinda buggy that will run but with a -10. If this isn't good enough you may try again after 1d10 hours of debugging. A Heavy Fail simply will not compile. Try again after 1d10 hours of debugging. A Crash Fail means the program was obliterated. You need to start over from scratch. This includes re-rolling the production time.

Writing Scripts. A script or macro is a simple program that piggy-backs off of the software that a computer already possesses. Think of it as a set of instructions for operations you perform so routinely that it makes sense to just write them down and give them a name so you don't have to talk the daemon through it step by step each time.

Writing a script takes **1d100 minutes** and requires an **Intellect + Computers** check. If it succeeds the script will run when executed. If it fails it will not. Scripts take up next to no space in a computer and will not effect its MP limitations.

Robot Damage

Being made of metal and plastic, robot bodies are far more durable than organic ones. When it comes to taking damage they ignore Wear and only take Tear damage. They do so with a damage type of **All 5**. This means no matter what damage type hits it, the robot takes 1 Tear for every five points of damage.

Recharging. If anything, what robots need to keep an eye on is their power supply. Once drained they shut down and will not come back online until someone recharges their batteries. To recharge a power supply the robot needs to hook into a power source and wait as the sweet nectar of electrical energy flows in. Most connections recharge **1 EU per minute**.

High Voltage Recharging. Because it can take a long time to recharge a large battery pack, many generators and installations offer high voltage connections. These always use a cable that transfer **5 EU per round** (aka 100 EU per minute). It only works with type C and D batteries and cannot connect to type A or B batteries for safety reasons.

Repairs. Robots do not heal damage. Instead you swap out damaged parts for new or nearly new ones. Make an Intellect + Robotics check to see how long this takes and how it turned out. The same action is used when upgrading a robot with better parts or

swapping a computer out of one body and into another (although this only takes 1d6 minutes to perform).

Intellect + Robotics
S: 1d6 Hours x Size Mass.
L: 1d6 Days x Size Mass.
H: Damaged Replacement Part!
C: Computer Fried!

So any kind of success means the parts were replaced in just a couple of hours. Size Mass refers to the size of the robot. Larger robots take longer to work on than smaller ones. A Light Fail means you did succeed but complications set you back by days. A Heavy Fail destroys a replacement part, usually the most expensive one. You will need to get a new part and try again. A Crash Fail accidentally fries the robot's computer.

Death. When a robot takes more tear damage than it can stand or is destroyed during a repair attempt, it dies. Make a **Luck Save -1 for every tear taken past its total**. Success means the computer can be salvaged. You can pop it out of the spent body and into something else, it's daemon will live again as soon as it comes online. Fail and the computer was damaged, rendering the digital being permanently dead.

Security

Thanks to daemons you don't need the Computers skill to operate a computer. Just ask it to do something and if it has the right software – *and you have the right security clearance* – it will do it for you. As far as security is concerned, most level 2 or better computers use facial recognition to tell one character from another. Some may require a digitprint or retinal scan to determine a character's identity before servicing them. Very few are so primitive as to let you access the computer on the strength of a mere name and password.

Bypassing a computer's security system requires a **Robocomkit**. Finding a wired connection and clipping the kit into it takes **1d10 minutes**. You need to do this in a place where the daemon cannot see you. Most computer terminals are covered by cameras and all but the simplest of daemons can recognize a hacking attempt when they see it.

For the actual check use your Intellect plus Computers skill minus any bonus the computer might have with Security software. Succeed and you gain entertance to the computer with a certain level of permission. A Light Fail is unsuccessful but it lets you try

again. A Heavy Fail or worse will be detected. Alarms will sound and it won't be long before the combat robots arrive. The computer itself will lock you out of making any more hacking attempts for at least an hour.

Intellect + Computers – Security

4: Syscrusher.
3: Sysadmin.
2: Private User.
1: Basic User.
L: Attempt fails, try again in 1 minute.
H: Hacking attempt detected!

Basic User. Basic User is the lowest level of permission. The daemon will let you do anything not deemed too out of the ordinary but stop you from accessing information that belongs to private user accounts or messing about with the operating system itself.

Private Users. These are password protected accounts set up for other users of the computer. If you are looking to hack into a certain person's information stored on the computer you need to attain Private User permission to do so.

SysAdmin. SysAdmin is short for *System Administrator*. This level of permission will let you do anything short of disabling the daemon itself. You need SysAdmin status to set up or delete Private User accounts.

SysCrusher. SysCrusher is the highest level of permission. With it you can do anything to the computer. This includes subduing or even deleting its daemon and replacing it with a different one. Computers may grant characters Basic User, Private User or SysAdmin status on their own systems, but they cannot grant SysCrusher status to themselves or anyone else.

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