Zhenren Human Upgrade Package

Zhenren (Yamataigo：真人), is an set of cybernetic (mostly nanomachines) and biosynthetic augmentations for humans (baseline, Nepleslian, and Geshrin), though research and prototypes have been made for more variant humans and human hybrids. It began field testing in YE 43. The name is derived from an ancient Lianjia belief system, meaning roughly “perfected human”, “enlightened one”, or “transcendent being” in Trade (language). It is also one possible character combination for the Yamataigo name Masato.

About the Zhenren Human Upgrade Package

AE-G1 Zhenren Human Upgrade Package	
YE Production Began	YE 44
Designers	Zhuhai Medical Industries and Advancer Enterprises
Manufacturer	Advancer Enterprises
Nomenclature	AE-G1-1A
Used By	Ryu Keiretsu
Availability	Limited Production
Price	22,000 KS (66,000 KS Húli Jīng)

End User Effects

Being the first generation of the Zhenren Package, those that receive it have some drawbacks in addition to the benefits the upgrade provides.

Compatibility Chart

Benefits

Zhenren have the following benefits:

- Increased average muscular strength with a sustained lift and carry capacity of 2 to 3 times the body weight of the individual in 1G. For individuals with ID-SOL genetics, it can push to 4 times.
- Able to maintain a sprinting pace, up to 56 kph (≈ 35 mph) for the tallest individuals for about 5km (≈ 3 miles). The user will be exhausted after such an effort, however.
- Improved twitch muscle reaction speed and efficiency.
- Reflexes and grace comparable to a dancer. Capable of faster learning, greater intelligence, and recall of tasks.
- Possesses digital mind and memory like Minkan.
- Limited Telepathy like Minkan
- Improved immune system (omitted with Geshrin)
- Resistance to toxins and radiation.

- Risks of both shock and bleeding out are reduced.
- Able to perceive light into the UV and IR spectra, as well as visual acuity allowing for reading fine print from 6m (20 feet) away.
- Estimated lifespan is around 150+ years.

Drawbacks

- Regular medical check ups check ups are necessary to ensure the optimal operation of implants.
- Adds 60kg (≈ 132 lb.) to body weight, kept proportional to their old height. This might not be a drawback for some. Some users will turn out more willowy, however.
- Typically adds 0.4 meters (≈ 1'3“) to final height.
- Caloric intake is 50% more than a normal Human.
- Sensors tuned to detecting materials with similar physical properties to Durandium Alloy will detect the user.
- Without monthly doses of powdered durandium, user's body will begin to replace the Durandium Alloy with natural bone and muscle. There is a chance the bones will break due to excess strain before the process is complete.
- Nepleslians and Geshrins have the most likely to successfully complete all upgrades. Whose with average cybernetics affinity run the risk of permanent disabilities if mechanical based implants are rejected.
- More variant and hybridized humans, such as Shukaren Daur require expensive modifications to make the Zhenren compatible with their nonhuman and divergent-human biologies, and as such require more recovery and training time to learn to use their upgraded bodies effectively.
- Pure ID-SOL genetics are incompatible with genetic based augmentations.

Appearance

Humans that receive the Zhenren package can appear either as willowy and graceful or as brawny and sturdy. It depends on the individual's genetic makeup and any decisions made to customize the body. As the package is largely implants, an individual can continue to increase their mass and definition if they put in the work like any other human bodybuilder/athlete. Though they will need to train significantly harder compared to others.

The average height for males after the procedure is 2.2m (7'3”) and 135 kg (298 lb.), while females average at 2m (6'7“) and 118 kg (260 lb.), with an average cup size of D. These numbers are representative of average-sized humans receiving the upgrade. Those who are athletic will have higher mass aka be heavier. Smaller or larger human hybrid species will change proportionally (with the exception being ID-SOL who are not lengthened).

History

> *“We live in an universe of super beings and horrors such as the Nekovalkyra and ID-SOLs. We should not count on the good graces of either to combat those that wish to do us harm. While cybernetics alone can help even up the playing field a little for humanity, if we are to truly survive in this galaxy we must elevate ourselves!”*
>
> **Qin Jin, YE 32, Nepleslian Geneticist Conference**

Born out of Qin Jin's desire to improve all of humanity and still remain human, the project has taken on many forms before reaching its current state. Initially, Qin Jin envisioned a complete genetic alteration such as the “Perfect Evolution” project, but PNUgen's reasoning and end result put him off to the idea that genetic engineering was the complete solution to elevating humanity. He instead opted to develop a package of genetic enhancement and cybernetics to achieve the goal.

Work on the project languished until his daughter, Qin Chuntao, graduated from medical school in YE 38. Working on a digital mind interfaces and organ enhancements, first on animals (pigs), the pair decided in YE 42 to use Chuntao as the first live test subject of the Zhenren X5N Digital Mind. Despite this, the project was once again put on hold when Qin Jin was forced to leave Nepleslian space after a hostile takeover by the Black Orchid Triad of his biotech company.

But fortune would be on his side when the Ryu Keiretsu acquired a controlling interest in Advancer Enterprises and hired Xavier Armstrong as chief scientist. While no PNUgen expert, his experience in genetics and nanotechnology was still beneficial for the company, as he was able to parse and comprehend the medical research Qin Jin and Advancer had done.

Project Ninetails

In YE 43, Yugumo Corporation approached Ryu Keiretsu with a novel idea: to test the limits of the definition of Human by finding a volunteer from a more distantly-related branch human. With Yugumo providing funding for the black project, the corporations found a volunteer of the human-hybrid Shukaren Daur species, Cecily Winters. The project was a success, despite the extensive recovery and training time and the great expense, in terms of both the subject's enhancements functioning at optimal levels, and the incredible leaps in Daur biotechnology gained. The product variant was known as Húli Jīng, and set to be released to mass production the next year, with an expected baseline cost of triple the standard rate for a total of 66,000 KS.

Augmentations

The Zhenren Human Upgrade Package, as its name implies, comprises of several augmentations, some of which may be installed separately, while some are dependent on others in the package to function. All make use of titanium alloy when structure is needed.

Zhenren I1N Digital Mind

The Zhenren I1N is a combination of the Advancer's TIN/neural lace and the digital mind prototype first used by Qin Chuntao. In addition to giving the user minor psionic abilities, a portion of the brain is

replaced to function as a biosynthetic computer in addition to its original function. The operating system installed is up to the user to select before the implant is installed.

The Zhenren I1N differs slightly from the TIN System. The Nanomachine Hive of the implant is attached to the T3 vertebrae of the spinal column. This is due to the movement of the Spinal Wired Neural Interface Port from the lower back to the base of the neck of the individual. Cabling in the hands (or around the wrists) can also be used by the user to directly connect to electronics.

Cost: 3,000 KS (General Availability)

Additional notes: Other races of beings with similar brains to humans are also able to use the Zhenren I1N with adjustment.

Zhenren I2N Cortical Modem

The I2N Cortical Modem is a collection of implants and replacement of the primary visual cortex with biosyntheic replacements. As the primary visual cortex is responsible for parsing the visual data from the retina, the cortical modem supplements this process by injecting the HUD and GUI of whatever operating system the user is using for their digital mind.

The rest of the natural visual cortex is left untouched to retain the brain's natural ability to locate and identify objects. Nanomachines are needed to continually maintain the system at peak efficiency.

Cost: 2,000 KS (General Availability)

Additional notes: Other races of beings with similar brains to humans are also able to use the Zhenren I2N with adjustment.

Zhenren I1V Ocular Implant Package

The cornea is replaced with an artificial one that consists of a light detector and a mechanism for optical zoom. Using a thin layer of matrixed Transparent Durandium and ADNR, the eye is protected from injury. The aqueous and vitreous humors are purified, with the removal of proteins that can form floaters that can distract an individual and distort light before it reaches the retina. The retina is given a treatment that expands the variety of, and increases the density of, cones and rods, particularly rods, giving greater acuity, low-light vision, and more sensitive color differentiation. The light detectors on the artificial cornea are passed through and combined with retinal information in an upgraded opticnerve. Finally, the irises are impregnated with an Omnihue matrix, allowing control over their color.

The end result is a person capable of with enhanced low-light vison, the ability to perceive ultraviolet and infrared, and acuity that can read fine print at a considerable distance.

Cost: 1,750 KS (General Availability)

Additional notes: Other races of beings with similar eyes to humans are also able to use the Zhenren I1V

with adjustment.

Zhenren I3N Myelin Enhancement Package

THe I3N enhancement is designed to add additional layers of Myelin of the user's nerves. The end result is an increase to reaction times, possibly competing with the reaction times of Nekovalkyrja, depending on the individual's natural talent. Due to the nature of muscle memory and memory as a whole, the I3N also has the added benefit of decreasing the time it takes for users to learn new skills and information, and recall it when needed.

Unlike most Zhenren packages, it does not require homeostasis nanomachines to maintain it.

Cost: 1,250 KS (General Availability)

Additional notes: Other races of beings with similar nervous systems to humans are also able to use the Zhenren I3N with adjustment.

Zhenren I1B Pulmonary Enhancement Package

The I1B Pulmonary Enhancement Package consists of a pair of bio-engineered lungs grown with biosynthetic polymers for better efficiency. Additional polymer tanks are added to allow the lungs to hold excess oxygen that is not immediately absorbed into the body. This allows the user to hold their breath for longer periods of time compared to the baseline.

In an emergency, this allows the individual to survive the vacuum of space long enough to put on emergency equipment if they are wearing a suit that keeps their body pressurized.

Cost: 2,000 KS (General Availability)

Additional notes: Other races of beings with similar Pulmonary systems to humans are also able to use the Zhenren I3N with adjustment.

Zhenren I4B Musculoskeletal Enhancement Package

The I4B package is based on the earlier Advancer Iron Bone Enhancement. In addition to strengthening the user's musculoskeletal system, the I4B also lengthens the bones of the user (porportionally) to make room for additional implants by replacing their solid growth plates with a biosynthetic growth plate. The skin is also enhanced to stretch and grow to compensate. Lastly, a storage of bio-available durandium is also installed in various locations of the body that can be used in emergencies (about 3 months worth). The system's nanites can draw and add to these locations like fat.

As it is used in connection with the Zhenren Package, the I4B is not available as a stand-alone option.

Cost: 5,000 KS (Limited Availability)

Zhenren I2B Cardiovascular Enhancement Package

The I2B makes use of electro-active polymer-enhanced bio-engineered hearts to allow them to pump more efficiently and harder. To handle the increase of the speed and pressure of the blood flow, the I4B's nanomachines are programmed to reinforce the user's cardiovascualr system with Durandium Mesh.

This implant combined with the lung and muscular upgrades, the user has the ability to outrun horses in short sprints.

Cost: 2,000 KS (Limited Availability)

Zhenren I3B Digestive Enhancement

To enhance the survival ability of users of the Zhenren Package, the appendix and cecum of the large intestine are replaced with with bioengineered equivalents. The new cecum continues to absorb salts and electrolytes as normal, but it now holds plant material long enough for cellulose to be broken down by the contents of the appendix. Waste that is not broken down, such as indigestible or particularly slow-digesting materials, are lubricated.

The appendix contains a nanomachine hive and bioengineered microfauna. The nanomachines' primary function is to act as an extension of the homeostatic immune system for the digestive system. The microfauna produce additional enzymes needed to break down what the natural variety are unable to. Over time, the two populations merge into one that is capable of doing it all. If the enhancement is used with the Zhenren Human Upgrade, the nanites also enhance the plasticity of the intestines to increase their length. Surgical nanites deliver additional material and nutrients to help speed the process.

The end result is an individual capable of getting nutrition and energy from a wider variety of foods.

Cost: 3,000 KS (General Availability)

Additional notes: Other races of beings with similar digestive tracts to humans are also able to use the Zhenren I3N with adjustment.

Zhenren I1G Genetic Supplement

For non-Geshrin humans (primarily Nepleslians), an extra enhancement is given to increase the number of times cells can divide, lengthening the telomeres. This reduces the effects of aging and extends the lifespan. The hive for the Homeostatic Nanomachines is also installed on the left kidney.

Cost: 2,000 KS (Limited Availability)

Additional Implants

A user of the AE-G1 Zhenren package is capable of having additional cybernetics installed. The I1N's neural lace facilitates the installation of additional neural enhancements and implants making use of the user's nervous system.

Package Price

While intended to be installed as a package, components that do not depend on others can be installed individually, with the prices as noted in their descriptions.

Price: 22,000 KS

Species Compatibility

The following species have been identified as compatible or possibly compatible with augmentations:

Human Species				
	Geshrin	**Human**	**ID-SOL**	**Nepleslian**
Cybernetics	High	Average	Perfect	Perfect
Nanomachines	Average	Average	Average	Average
Symbiotics	Average	Average	Average	Average
Pharmaceuticals	Average	Average	High	Average

Installation

Two options are available to acquire the Zhenren Package at a Bixii Clinic:

1. Transfer to a clone body grown with a stub nervous system having all of the upgrades already completed
2. Undergo a lengthy process to lengthen and reinforce their existing body

With the first procedure, the individual's brain is first augmented in situ, then transferred physically into the new clone body. The old body is simply cremated and any existing augmentations saved for possible installation. Android species such as a Minkan and Nekovalkyrja would need to Soul Transfer into a Nepleslian or possibly (however highly unlikely) Geshrin body before they could receive the package. Yamataian citizens are able to restore from ST backups should things go wrong, and proof of such a backup made after the upgrade is purchased must be presented is required to be on file before performing the procedure on them.

For those that opt to remain in their existing bodies (Geshrin and Non-Yamataians), the process is meant to be as non-invasive as possible. Surgery makes use of both Advancer Enterprises' Surgical Nanites and Delivery Nanites.

Implantation Procedure

First, the I1N neural lace and digital mind implants and the I2N cortical modem upgrades are installed into the host brain. If using a clone body, then the procedure is essentially complete once the host brain is transferred and the digital telepathy implants activated once everything is confirmed to be in working order.

The procedure is much longer for those remaining in their original body. Considering the risks of the digital telepathy components of the I1N package, those are installed later in the process. Two Nanomachine Hives, one each for the Advancer Iron Bone Enhancement and the homeostatics, are then installed into the liver and left kidney of the upgraded body.

After the patient is monitored for 2 days, the body is then proportionally lengthened and reinforced with the I4B package by having Surgical Nanites replace the former growth plates with a biosyntheic growth plate. The process is then controlled as the individual essentially experiences near constant growing pains (even with painkillers) for at least 2 weeks as the musculoskeletal system is both lengthened and reinforced, the bones grafted with a durandium matrix.

To occupy the individual's mind from the distracting side-effects of this new “puberty,” the process also involves a lot of training on how to interface with the I1N implant without causing harm to themselves or others. The individual is given a virtual room for them to watch entertainment and interact with others at the hospital as an infomorph. Once the body is halfway in its lengthening process, the digestive tract begins to be enhanced.

In the third week, after ensuring the body is not rejecting the nanomachines or biosynthetic material, the final series of implants and replacements begin. The user's I1B Pulmonary and I2B Cardiovascular enhancements are installed into the body. The eyes are then enhanced with the I1V vision package and the remainder of the digital telepathy implants of the I1N are installed into the now enhanced brain.

The patient is hospitalized for one more week in order to be trained on how to make use of their digital telepathy abilities, and adjusted to it by gradually increasing their exposure. After one month as an in-patient, they are released with weekly checkups over the course of the next 6 months.

Drawbacks and Care

The Package has the drawback of requiring regular checkups with specialists to ensure optimal operation. Someone who regularly misses them will not be at an immediate risk of dying, however they are at risk of having problems that might develop and compound into something lethal. Thankfully, much of the basics of the checkups can be conducted by any physician familiar with NH-series lifeforms.

Zhenren have a higher metabolism due to the power requirements of some implants and their larger muscle mass, which the enhanced digestive system tries to counter when out in the field by allowing the consumption of a wider variety of “foods.” As such Zhenren users have to regularly eat twice the amount of food of a normal human to ensure there is enough fat stored to have the same starvation period as a

normal human. They also need to eat a number of special supplements (such as powdered durandium).

OOC Notes

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Approval thread: link

Products & Items Database	
Product Categories	cybernetics
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