Jon was looking at the data feed as it was populating Puii's investigation tree when the co-pilot's voice announced that they'd be arriving in Atlantis in 10 minutes. A thin dark line, stretching from the horizon to a few inches above, was clearly visible now. There were very few clouds in the sky and a clear view of the city would soon reveal itself. From that distance the famous groves of the elevator that appeared in most commercials and advertisements were not visible, but they would be easy to spot and marvel as they closed in on the city.

The space elevator design was not a strait tether line as envisioned in the past, but a thread-like chain of two strands wrapping around themselves as they moved upwards. Like building cloth threads, the idea was simply to produce something that would be strong enough while reserving some elasticity for compression and stretching. Since a twisted wire can extend and compress like a spring when forces along its axis are exerted, the elevator tethers would be able to flex up and down to accommodate the excess stress. The source of the stress could come from the elevator cabin (*climbers*, as they were often called), cross winds and any form of accident the designers could foresee. Instead of cloth threads, though, the tethers would now be from industrially produced nanotubes and would wrap around each other like someone joined two extended springs with the coils of one complementing the grooves of the other. The *thread of life*, as it was named during the conceptual phase of its design, soon changed as the requirement to scale was not sufficiently supported. Carrying large payloads and scaling the number of climbers according to demand was an absolute requirement if the venture was going to successfully compete with the space transport carriers that all nations and corporations were using these days. That meant that either one huge climber would be used going up and down as in a typical elevator or that multiple ones would be allowed, similar to how multiple metro-trains service a line at the same time.

Having one of the climbers coming down as a counterbalance to the other going up, as old elevators did, was not even considered as a possibility as it was a mechanical nightmare, especially for the city and space ends of the elevator. Victor Hugo would have probably had it that way in his 19th century science fiction novels, but nowadays a much more elegant solution was required. Having one cabin also posed a threat as it would render the elevator inoperable in case of failures, accidents, or sabotage. If that happened the whole space transportation industry would come to a halt, not to mention the potential losses of great amounts of cargo and human lives.

The idea of having many smaller climbers that could synchronously serve the industry like single-wagon metro-trains seemed the most logical one and was adopted early on as a de facto requirement. When market needs were high, elevator climbers from the parking and service stations at the apex anchor in the space end of the elevator would be enlisted for circulation, while when demand was low they would be removed from circulation. This varying load on the elevator would be accommodated by slight stretching and compressing of its spring-like shape. The ability to vary circulation and respond to market demand would also minimize cost and maximize profit, making the twisted two-tether design with multiple climbers moving up along one side of the tethers and coming down from the other the undeniable champion of the designs and was approved unanimously by all parties involved. The addition of cross-sectional beam connectors between the two tethers also became an important feature of the design. Like steps in a ladder, placed at specific intervals along the stretch of the elevator they would eliminate damaging contacts between

the two tethers. That also added horizontal flexibility when strong sheer winds would unevenly shift the two tethers. These rung-like connectors attributed their elasticity to their coiling internal structure that allowed them to act like horizontal springs. That zipper style design allowed the two tethers to move horizontally a few meters to and from each other when needed to alleviate unexpected loads.

With the design looking like a twisted ladder it didn't take long for people to see its similarity with the structure of the DNA. This became more evident when the marketing people came on board at the initial stages of the design. Selling something relating to life was by far more appealing to selling a twisted ladder so the *double-helix* name for the elevator project became an easy sell. Its direct connection to the evolution of life on Earth would be expanded to suggest it would lead humans to their evolution from a terrestrial to a space species. The space elevator was the next step in orbit transportation, so the "evolution" narrative became the talking point of every presentation of the double-helix project.

The marketing team needed something strong to counter the negative connotations of the endeavor with religious groups that tended to see it as arrogance and a biblical analog to the tower of Babel. As if flying upwards toward the heavens with planes and rockets or even launching satellites dedicated to religious broadcasts was not an upward attempt to reach God. In any case jinxing the project with a prospective fate like the biblical Tower of Babel was not something that the city needed, and many points were included in the marketing messages to emphasize the dissimilarities of the two projects. In groups with prevalent religious values the project was always presented as praise to God(s) and a testimony of his grace for infusing humans with the ability to build such marvels. The message would also point out that the project brought people from different cultures and languages into a unity instead of splitting them as the original tower did. English was the official language of the city so, in a sense, humans were reversing the original sin of arrogance and becoming the wise and worthy creations of God we were meant to be.

The curse of Babel was not the only one the project had to fight. The name Atlantis had similar negative connotations thanks to Plato's dialogues where it was first mentioned, and the many movies and stories it inspired afterwards. Again, arrogance was the cause of Atlantis's doom to sink to the ocean floor. One could reason the fear of having the same fate was a legitimate one for a floating city in the middle of the Atlantic Ocean. Avoiding the similarity by giving the city a different name was debated by some but that was perceived a weakness as it would suggest the fear was realistic. Since no association could be avoided, the originators of the project decided that arrogance is not a bad label for pioneers who believe in their skills and ingenuity and want to conquer new territories. The world was mature enough, at least with respect to technology, for undertaking a project of such magnitude. Anyway, most people thought that such a project was long overdue.

A distinction between the city and the elevator was made to separate the two projects as selling points to a greater variety of investors. While the double-helix was sold to space exploration stakeholders, the city itself was meant to be sold as a neutral territory for political establishments like Interpol, the World Bank, the United Nations, universities and research centers, among others. The city's heart and main source of revenue, though, was its economic zone where high-tech industries could house their headquarters, research and production facilities. Core among them was

any material, product or service industry the elevator would need to ensure the endeavor was sustainable and independent from any support for the mainland. The telecommunications industry became a major stakeholder due to their close interest with the satellite sector, followed by the materials and IT sectors. The main requirement for everyone involved was that they would share some of their profits by attending to some aspect of the city's needs. It was a form of partnership that would benefit all as the resources would go toward improving the city and the services it provided.

The truth of the matter was that most of the larger corporations that migrated their headquarters and core research facilities there felt the city as a part of them and voluntarily sponsored many of the community services like hospitals, libraries, athletic facilities, theaters, galleries and almost any common area of the city. When the first sponsorships showed up everyone rushed to put their name on city buildings and services to showcase their wealth and strength to the competition, to the point that a share of their profits would go to exclusively sponsoring the elevator.

Of course, all these revenue-generating core industries attracted businesses from support industries to care for, feed and entertain the numerous employees required to staff and operate the city's organizations. One of the early and core contributors was the agricultural industry. A great part of the city was dedicated to the food industry, with farming and fishing at its core. A combined production of grains, fruits and animal farming above water with fisheries submerged right below them was accommodated to satisfy the basic needs of the city's occupants and future space travelers. Further down on the ocean floor and around the city the mining industry was thriving by exhuming the valuable resources of the Mid-Atlantic Ridge. Some of the mining operators would even have small supporting settlements floating on the ocean above their underground operations, making the city the de facto capital of those satellite communities.

The one industry that was expected to boom at a later stage but surprisingly picked up early on was the entertainment and tourism industry. Atlantis became one of the premier vacation spots in the world with luxury hotels and casinos taking over large slews of its residential areas. The revenues were so high from that sector they forced most of the permanent staff like Puii and Jon's son Steve to move to underwater apartments if they wanted more spacious residences than a hotel room for two. There, they could build an artificial environment of their choice. For Puii that was the tropical forests of Laos, while for others it could be desert hills, a cottage or even a fantasy land they dreamed up.

As the skimmer was closing on its destination the city's urban outline became clearer. Three concentrical circular strips of land were encircling the elevator on the sea surface like floating pearl necklaces around the double-helix neck. It looked like a bowman in the sky had released his double-helixed arrow and hit bullseye on the city center. The only difference was that instead of the black and white circular stripes that form the rings of an archery target there were interchanging rings of land and water. The most central ring that formed the bullseye was the center of the city. It was called the Core and included all the development and infrastructure that formed the base of the elevator along with the command and control center of the entire city. This was encircled by a wide ring of water like a moat surrounding a castle, followed by a ring of land

nicknamed Middle-Earth (a reminder of the fictional setting of the classic Lord of the Rings and Hobbit novels), then another wide ring of water, and a final ring that housed the industrial and residential complexes. Nicknames were unofficially assigned to each ring from the fictional classic epic fantasy novel Lord of the Rings, with the residential and industrial outer ring as the Surrey where the hobbits lived and Lonely Mountain where the industrious dwarves ruled. The command and control city center then became Isengard with the elevator as Saruman's tower. The fantasy setting would excite commuters and residents as they moved from one section to another. The fictional analogy was strong enough to even post in tourist ads across the world.

The three concentric floating surfaces with their in-between moats were subdivided in six equal sectors, each like someone had cut the circular shape of the city in six equal pizza slices by running moats radially from the center to the perimeter around each slice. The slices would be further cut into a central piece, the Middle-Earth piece and the outer piece. While the central and Middle-Earth pieces had clear and dedicated functions to control the city and provide food for its residents, the outer segments were either residential or industrial. If one section was industrial the next one would be residential, and so on until the circle was completed. This supported a more balanced distribution weight-wise on the floating city's infrastructure and allowed residents who worked in the industrial sectors to be within walking distance from their work.

A naming convention was adopted for each "pizza slice", with the sector pointing north as North and its diametrically opposed that was pointing south as South; to their left and right the sectors were named North-West, North-East, and South-West, South-East correspondingly. With the Earth's equator aligned with the moat separating the north and south pieces, from above it looked like the city was a floating compass with its North sector as its needle pointing straight up toward the North Pole. All pieces were connected with their adjacent ones above water with moveable bridges that allowed each to connect and separate if needed from its surrounding pieces. From above the whole structure looked like the bust of an ancient Egyptian pharaoh with the floating pieces forming three concentric necklaces around his neck emulating the city pieces and the elevator forming the tip of his crown going all the way up to the sky to meet Ra the Sun God.

The whole idea behind the segmentation of the city into loosely connected floating pieces was made for safety rather than artistic reasons. Any disaster like a fire would be isolated in the segment it occurred in, leaving the rest of the city unaffected. The piece that had the issue could even be towed away from the city to restrict the spread of the damage and repair or replace it with minimum disturbance for the rest of the city. The wide strips of water separating the various segments also allowed the city to become more solid if its pieces all closed in toward the center or looser if they all moved away from the center. The former would be the case when the city needed to move for whatever reason, while the latter would be the case of the elevator collapsing on it. The risk of collapse due to a construction or engineering error was minimal due to the multiple test and state-of-the-art construction techniques that were applied, but the risk of collisions with runaway aircraft, rockets and satellites was far more realistic and a possibility that could not be ignored.

If that was the case, then the actual threat would be to have the pieces of the elevator close to the sea level falling on the city as everything higher would clear the city due to the rotation of the Earth. By the time they would hit the sea the city would have moved following the rotation of the

Earth. For the pieces that were projected to hit the city, the controller or captain as their official rank was could rotate the plane of the city to ensure pieces would fall in one of the radial moats emanating from the center. The Middle-Earth piece was also positioned in-between the elevator and the residential and industrial ring to hopefully get the hardest hit from the falling pieces, sparing human lives that would be in the fortified city center of the outer ring.

For more cosmic threats like an asteroid hitting the ocean nearby, the city could easily sail left or right to its geographic meridian and if needed to higher or lower altitudes to evade direct or near hits. In the latter case the only concern would be a giant tsunami that would reach and possibly devastate the city. The tsunami threat was more real considering underwater earthquakes that could trigger one, or humanity at its worst. While large asteroids could easily be deflected with modern technology and earthquakes could be predicted days ahead, irrational human action had its challenges and was beyond prediction. Having a lunatic explode a nuclear bomb even at a distance from the city was not something that could be avoided or eliminated with high certainty, so the city had to prepare for the worst and hope for the best. Artificial meteorites like falling space stations or large spaceships could also be a potential threat that had to be considered despite no record of such incidents up to now.

The city would face such dangers by either pulling all its pieces over the moats to its center and tightening them together to form a solid flat surface for small tsunamis or pushing them further from the center while elastically chained to each other so that the city radius would become as long as the height of the wave. This would allow the city to tumble over the wave like a seesaw rolling over a ball. Fastening emergency pods were available around the city floor and gateways for everyone to strap themselves in like Odysseus when the sirens sang. Each stand comprised two equal transparent cylindrical pieces cut in half from top to bottom along their vertical axes, one inside the other the size of a tall man. There were seats attached to their base with strap harnesses and air and food supplies as well as micro propulsion systems for small movements under water. As soon as the occupant would sit and activate the emergency signal, the half of the cylinder that was inside the other would roll around the vertical axis and tightly close forming a complete cylinder standing up with the human inside it. Children could also be accommodated in the laps of their parents and tightly positioned with extra harnesses. The pods had ample food and water supplies for two people to last them for at least a month, and extra oxygen tanks in case they were underwater. They were firmly attached to their horizontal surfaces but could be released and even maneuvered underwater if the occupant knew how to navigate them. Even if someone didn't know how to do it, the AI systems of the pods would take the necessary decision to guide the pods to the surface. In addition to their core function as safety devices, the arrangement of the pods in lines, circles and other shapes would make them the favorite for outside meetings and relaxation benches for citizens and visitors.

Understanding the structure and operation of the city was of outmost importance to Jon as he would have to trace Puii's steps throughout the city during the last hours before his horrific death. The different parts of the city were now present in the investigation tree Izabel was building. The whole tree began to spread over different sections of the city with Puii's quarters in the center and a trace of him throughout the different parts of the city in the days and hours before his death.

His avatar would appear with a faint reddish shadow in the city parts he visited a couple days before and started getting redder the closer it got to his time of death.

His previous day seemed to have started normally with first active contact in his office at the university with his team. Puii's research interests were the evolution of macro-environments like the modern financial system and global economies. He had two resident postdoctoral assistants and three others working virtually from other parts of the world. They were all working on his core research project coded Circular that concerned the study and prediction of circular economies under different economic scenarios that crossed national barriers. Developing closed economic zones across continents where everything would be recycled was of great interest to financiers and policymakers as these "secluded" economies could serve as buffers in turmoil and unstable market situations. Producers of crops would connect with animal farms that would connect with food processing factories that would sell to everyone involved in the chain, closing the consumer–producer loop. Of course, in real-life situations a multitude of industries were involved, including mining, manufacturing, and services like healthcare, education and entertainment to ensure a wide spread of needs were covered. Atlantis was such a case in point of a highly localized circular economy. Because such economic structures could operate independently of local and global competition, they could ensure a minimum living standard for their stakeholders while acting as safe repositories for capital.

The funding his sponsors provided allowed Puii to enlist one virtual and two resident postdoctoral assistants. Rozan Bates was his lead postdoc who along with Gil Thomson were the resident assistants who met with Puii the previous morning. They were joined virtually by his third postdoc, Carlo Kalogero who was based in Sicily. Virtual assistants were the initial stages of becoming a resident, and usually a research faculty like Puii's would have many more than one but Puii seemed to be heavily involved in the nitty-gritty aspects of coding himself that he didn't need more than one. Moving from virtual to resident in Atlantis with all of the state-of-the-art equipment and the best researchers worldwide was something like a promotion in the research world as only the best would be selected and sponsored. From the assignment descriptions it appeared that Rozan and Gil were in charge of core aspects of Puii's active research project while Carlo was used for monitoring, maintenance and filling in gaps in coding. The team had set up multiple virtual worlds of resources with producers and consumers and was studying their evolution based on their geographic distribution in time and the policies that the decision-makers of each world would establish. Each element in the world from minerals, water and energy to individuals and groups would be a separate software unit or agent as they used to be called, with its own details, attributes and purpose. This approach to simulation and prediction had its roots in the 20th-century AI technology called intelligent agents, or IAs for short, and aimed at simulating humans and other "living" entities in acting autonomously and making decisions. The collective interactions of all agents would give rise to behavior in the world they were simulating. By tweaking the parameters that represented the agents' capabilities and the environment, scientists could conduct realistic simulations of whole worlds and even the entire population of the planet. The computational power of modern computers and especially those in Atlantis would allow for virtual universes with trillions of agents to interact with each other in real time.

The evolution of such worlds was the topic of the morning meeting Puii had with his team that day. Apparently, some of their simulations had reached a dead end and they decided to shut them down and release their computational resources to other simulations. Dead ends usually meant that the competition amongst the conscious agents in those worlds had depleted resources either through in-fighting or greed, which ultimately led to or was about to lead to their extinction. In one of the worlds they decided to keep the same initial conditions but try different sets of policies to see if this would affect the long-term sustainability of some of the communities within the world. Since the agents were completely independent of conscious influences, the usual practice of passing instructions to them without disturbing their world would be to infuse suggestions to the agents that reached leadership positions as dreams during their sleep. For agent societies that were more primitive they would even do that by infusing visions to select prophets or religious leaders of those worlds. While the computer used random strings of letters and numbers to label such agents, most researchers would humorously assign them names like Moses, Tiresias, Nostradamus and of other figures from their real world that historically were referred to as prophets. Puii's doctoral thesis was on the evolution of philosophical and religious movements, so his team was used to having him name certain key agents as Socrates, Jesus and Buddha, among others.

Apart from the initial morning briefing, Puii had no other contact with his team that day. He had spent the rest of his morning working alone in his office. His computer was locked so Jon activated a request for access to all his files and communications. To ensure this wouldn't take long he selected foul play as a preliminary assessment of his death. He knew that if it was deemed as suicide everything would be locked for privacy reasons and only the beneficiaries of his will would be allowed to access his system. In Puii's case these were his parents who were living in a remote village in Laos.

Puii worked in his office with breaks for lunch and some swimming at the university's facilities up until the afternoon. After leaving his office, he went back to his place for a couple of hours and then visited the Galaxy casino in Angel 1. There were only two climbers in operation at this stage of the construction of the elevator. They were named Angel 1 and Angel 2, apparently for inspirational purposes. The elevator was at its 11-kilometer height at the moment and two climbers were the most it could afford for practical purposes and to avoid congestion. There was a terminal station at the 10^{th} kilometer where the climbers would switch strands before commencing their descent. They would again switch strands at the base and the whole process would be repeated continuously. The two climbers could never be at the same level when switching strands, so that night Puii picked up Angel 1 at the base for its ascent to the 10-kilometer station while Angel 2 was starting its descent at the same time from the station to the base.

Climbers would move material and equipment, while returning waste and faulted equipment down. Visitors and personnel would join the rides as needed. As the elevator started building height, though, there was an increasing demand from visitors to travel to the top of it and experience the ascent and descent while enjoying the stunning view. The demand reached the point of political pressures in some cases, so the city decided to convert the lower part of the climber to a fully functioning entertainment lounge with casino, restaurant, bars and meeting places. This was planned for the later stages of the construction and when the elevator would enter its operational stage

carrying cargo and passengers, but the anticipated revenue streams of having it early on could not be overlooked. The two climbers generated profits from visitors beyond anyone's expectations, so they became a center piece of the city's attractions as entertainment outlets. The climber's names changed from their initial Climber 1 and Climber 2 to Angel 1 and Angel 2 and their corresponding casinos were named Galaxy and Oceanus.

Parts of the 10-kilometer station were used as storage for construction material and supplies, but its greater part was modified to include a fully functioning small hotel, emergency center and entertainment center with a restaurant and meeting places. Those who could afford the high prices of everything on the station would reserve space for events like conferences, reunions and weddings. In the future when the station would be fully operational, some of the construction facilities would be converted for sports and any social function that could generate revenue. Skydiving was top on the list of sports, but it was under strong debate because of safety concerns for both the elevator and the divers. Having humans crashing down at high speeds could be problematic not so much as an engineering issue but from the negative publicity that would attract.

This multipurpose capability of the station that allowed it to function as a miniature city in the clouds led to its naming after the mythical floating city of Asgard from Norse mythology. The most popular ride to the station was the afternoon one as it allowed one to observe the longest sunset on the planet. The ride was timed to start when the Sun was setting a little above the horizon. The climber would ascend with enough speed to counter the rotation of the Earth and keep the Sun visible while Atlantis was moving into the dark of the night. Of course, this was the most expensive ride and the one that frequent visitors of the casino would avoid.

Puii had taken the following, cheaper ride the night before as he had done multiple times in the past. The casino's logs showed him as a regular of the evening rides but there was no indication of any net earnings of any sort that would worth mentioning. Some nights he would lose either large or small amounts and others he would win large or small amounts, leaving no overall gains or losses.

Casino and money were something that could potentially relate to criminal activity, so Jon focused on expanding the casino node in the investigation tree. Immediately Puii's transactions appeared in chronological order as a table with the dates in one column, the climber's name in the second and then the net earnings. Additional information like the time of play, duration and bets also showed up but Jon was more interested in potential patterns that could indicate any game strategy or pathology that could possibly relate to crime. Gambling addictions could sometimes lead to big losses that would prompt someone to compensate by borrowing from conspicuous sources. When more losses followed one would reach their credit limit and not be able to make good on their commitments. If those commitments were to the mob, then they would run into serious trouble that could easily lead to their death if alternative means of compensation were not available.

The records did not suggest any such possibility as the net losses were very close to zero. He would always play roulette and each night he would only bet in combinations of black and white or large and small or even and odd where the chances of winning or losing were always 50% if one was not considering the green "0". It looked like he was playing according to some kind of algorithm but with very little luck. What was curious, though, was that Puii became a regular 3 months ago and while he

started earning or losing small amounts he gradually started having large gains and large losses. Although his net gains were always zero there were days where his loses could not be justified by his faculty salary or any other previous gains. The next days would of course balance out with wins, but if someone was to freeze time at certain moments, his wins or losses would have definitely attracted some bad attention.

Another pattern that emerged from his records seemed to be his preference for a very attractive Chinese brunette who was working as a dealer in one of the casinos. The videos from the casino cameras showed he would mostly sit at her table and was very generous with the tips he left when he won. At first glance, it would appear that his interest in the casino and gambling was a pretext for flirting with the sexy brunette. It looked like he found a way to be near her without losing any money.

Jon made a note next to the dealer's name in the investigation tree and clicked on Izabel's avatar, so she could follow it further in case it led to something interesting. They would have to talk to the dealer as she was one of the last people who saw him alive, together with some of the other players at his table. These were an elevator construction worker, a miner from one of the deep-sea mining colonies near Atlantis and a tourist couple that joined the table half way through Puii's stay.

Izabel acknowledged and started adding nodes in the investigation tree for everyone who'd had some interaction with Puii that night. The only things missing from the tree now were Puii's financial transactions and communications he had through his personal headcom and computer systems on him and at his place. All that information was considered private and was protected by international laws until the classification "crime" or "criminal investigation" was assigned by Jon. This was something he would consider as soon as indications of a suicide were not strong enough in his case. Although this kind of decision could be done remotely in this instance, Jon decided to defer until he personally visited the incidence scene.

Atlantis was a high-profile endeavor and anything attracting attention to it would also be high profile. That meant strong political pressure would be exerted to close the case, preferably as a suicide rather than a homicide. No one would want to have killers and criminals featured in the news with Atlantis as their crime field. There were incidents of criminal activities in the city in the past, but they were mainly petty thefts, smuggling, and fights among drunken workers or tourists. Being only a few minutes away from the city, a decision with heavy political implications could afford to wait a little longer.

The elevator structure was already becoming clear enough and looked more stunning than before. The strands were twisted cylinders made of extra-light composites that gave them a cloudy translucent milky hue with hollow tints throughout their surface. The nicknamed bean stalk strands were helium-infused to make them even lighter. This wouldn't be enough to make them float like a helium balloon if they were to be released, but it added enough buoyancy to slow down their fall in case of an accident or if drastic repairs demanded transportation of sections of it. Jet packs were also installed at frequent intervals that could boost parts of a falling helix away from the city if needed. Although the internal structure of each strand could not be clearly deduced, it looked like

each cylindrical strand was a rope-like structure composed of multiple helixes interwoven like tree roots going upwards to feed and support a giant tree canopy in space.

Angel 1 was also visible going up, almost 1 kilometer from the base. It looked like a two-arm mutilated body trunk with no head or legs. Its horizontally extending short arms from the top of its left and right sides were holding its vertical trunk a short distance from the two strands of the elevator to avoid potential collisions if the strand were to be deflected due to loads. The analogy with the human body was kept even in the designs, with designations like left and right arm and shoulder, and even chest and belly for the cargo and passenger areas.

The vertical position of the climber trunk would change at higher altitudes and would gradually rotate around its shoulders, changing its pitch to eventually become horizontal like its arms when it reached the terminal space station at 100,000 kilometers from the surface. As it neared the end of its ride the climber would spin faster and faster while rotating along the axis of its shoulders to match the spin of the space station and allow its centrifugal force to preserve the artificial gravity environment for normal human operations. The passengers would feel nothing of the accelerated rotation and could only tell the change by looking outside of the window sides of the climber. They would start from the ground with the strands on the inner side of the climber and the sea on the outer side, and as the trunk of the climber would start tilting from vertical to horizontal the side that was facing the city would now face the Earth and the opposite site would be facing space and the space station. It would be like an adult and a child facing each other holding their arms extended and the adult start spinning the child faster and faster until it spun around to completely horizontal.

That final rotation speed of the climber would match the rotation speed of the space station, so transition from the Earth to the climber and then to the space station would be like walking on a straight line on Earth. The Apollo space station supported the construction site of the upper end of the elevator along with its apex anchor and the section that was growing toward the Earth. It was a bigger construction site than Atlantis as the longest parts of the elevator were built there. There was only so much height the elevator could rise to from Atlantis before its weight and inherent instabilities collapsed it on the city. For that reason, huge sections of the double-helix would be built at the space station and gradually descend to their position to extend the Earthwards segment. This way, at the space station the elevator would grow toward the Earth while also expanding its apex anchor segment in space to balance the tensions the Earth part would experience. At some point the rising part from Atlantis and the descending part from Apollo would converge, signaling the completion of the megastructure. At that stage the section of the elevator going down from the space station would be much longer than the section going up from Atlantis. From afar the space part of the elevator looked like a rod pointing at Atlantis on the Earth while piercing the center of the rotating space station. When fully operational the elevator would look like the suspension axis that connects two wheels of a car, one wheel being Atlantis and the other the space station. The only difference would be that the suspension axis would look like an extended spring close to the Earth and slowly compressing the closer it got to the space station (to ensure faster rotations of climbers) with only the space station rotating as a wheel.

The space station part was visible from the surface on a clear day as a dim dot in the sky. Jon had already noticed it when he first arrived in Brazil, but the dot was getting a little wider as they were reaching Atlantis. The position of the station was clearer at night when all its lights would go on making it the brightest star in the night sky.

From the position of the approaching skimmer Angel 1 was completely vertical and at about 1 kilometer going upwards from the base. It would take some time before reaching Asgard, the 10-kilometer station at the end of the first pitch of the elevator turns. Its passengers would be able to experience only one complete rotation around the center of the helix, but a few daring ones could go even higher if they wished and paid enough. The construction platform that was building the new sections of the elevator was 1 kilometer higher and it would rise in small steps as it was 3D-building the strands upward. It was nicknamed Babel from those working there in defiance to what happened to the Tower of Babel. They all said it needed a certain kind of craziness to be working in suits at such heights, so their choice of name was meant to be a testament to their bravery. They would not be afraid of any superstition or historical precedence. Their motto was *when you fail you keep trying again and again*. It was amazing how much they felt related to all those ancient worker slaves on the actual Tower of Babel, if there was even one.

The construction site was now visible in the investigation tree Izabel was building along with the roulette players who last interacted with Puii. The miner at his table seemed to have been the last person to talk to him. The casino records showed that he and Puii had a rather intense argument at the roulette table that signaled Puii's departure and return to his home. Izabel was making a note on the tree to investigate the incident further when the pilot's voice announced:

"We should be docking in two minutes so please fasten your harnesses. This is not a scheduled arrival, so we will be maneuvering around scheduled traffic."

There were three ports symmetrically attached to the South, North-West and North-East industrial zones in Atlantis and the skimmer was approaching the South one. The ports were part of the three transportation hubs of Atlantis that combined runway strips tangentially attached to the rims of each industrial zone, with space port strips attached to them and port dock strips on their sea side. Each hub could be disconnected from Atlantis in case of emergencies and operate independently if needed.

Further out, two rings of breakwater barges were surrounding Atlantis to ensure the surface waves of the ocean were breaking down enough before reaching the city. They were real powerhouses surfacing just above the water and forming two dashed lines circling the city. Barely seen from the city beaches one could only tell of their existence from the foamy water as the waves were breaking over them. From high above these foamy breakwater strips looked exactly like pearls around Atlantis's neck. Each structure was anchored to the bottom of the ocean with long tethers that produced electricity as they extended and squeezed out from their anchor units. They would complement the city's power needs that were mainly covert by its three fusion reactors in its Core section. Whatever waves would escape the outer breakwater ring they would be eliminated by the inner ring, leaving a gentle drench on the city's shores. The residential areas would have an

additional inner circular breakwater section to drop the escaping waves into ripples that produced the gentle murmur of a calm sandy beach.

The case would be different for tsunamis caused by a hypothetical large meteorite crashing into the sea near Atlantis, or the most probable case of high-power earthquakes on the ocean floor beneath. The longer outer barges would move around to the side facing the tsunami to form an array of artificial reefs one in front of the other. One after the other they would take the first hits and weaken the incoming waves in the process. More than being a passive barrier they also had an active defense system of arrays of high-speed explosive projectiles. They would launch these projectiles in tandem like an array of arrows piercing the wave's front above and below the surface at five times the speed of sound. The sonic booms the projectiles would create both above and below the sea surface would form sound barriers that would break and momentarily even reverse the speed of the wave. The second inner circle of shorter barges could also perform the same trick if needed.

The skimmer flew over the outer ring and gently descended into the water right after the inner ring. It taxied for a hundred meters more on the water maneuvering around cruisers and freighters and docked on one of the jetties emanating from the port. An older man was standing by the dock with a younger man a little behind him. They were not wearing the field suits like the one Izabel was wearing but the formal office uniforms Interpol officials wore in their offices. Two police vehicles were parked one behind the other a little further from them.

Jon was expecting some kind of a "welcoming" committee, but he did not expect the Director of Interpol to be there in person. Martin Wisk had been Director for over a decade and he was an old acquaintance of Jon from the time he was a Sim. He was one of the first to graduate from the Sims academy and a very reputable operator and negotiator at the time. Jon served under him in a few missions when he was a junior Sim and the two got along very well together to the point of often socializing when Jon was with his first wife. Steve used to call him Uncle Martin given that he didn't have any uncles from either side of his family.

When Martin left the Sims he became an Interpol agent. His negotiation skills helped him to quickly ascend to the Director's position. He was also the one who moved the Interpol headquarters to Atlantis. The city's security required someone with both military and police training as well as a wide knowledge of global affairs. In addition to policing across nations, Interpol took over the responsibility of policing the city and defending it against outside threats. Martin combined all the necessary skills for the job and he was a natural choice for leading the expanded operational functions of the organization.

Jon was planning to meet him anyway during Steve's birthday celebrations, but this was not an informal occasion. The man behind him was holding an Interpol field suit apparently for Jon to use.

The skimmer came to a stop in front of the two men. Jon came out first and along with Izabel shook hands with both the Director and his assistant.

"Nice to see you Jon!" exclaimed the Director.

"Nice to see you too Director," replied Jon and continued. "This is Izabel Varga, my second on this assignment."

"This is my assistant Paul Rayan," followed the Director. "We brought you a suit."

Jon picked up the suit and responded, "Give me a minute guys."

He took off all his clothes in front of the astonished Paul and started putting the suit on. Izabel cracked a faint smile and turned her gaze away from Jon and toward the Director who started talking, completely indifferent to Jon flashing everyone.

"Listen Jon, I am getting a lot of heat for this case from multiple directions. I just want to tell you that I will keep as much as possible away from you, but you should be ready to handle whatever spills over."

"We should be fine," responded Jon. He was about to follow up his response when Martin rushed to add.

"I am not telling you this so you can be accommodating. To the contrary I want you to ignore any attempt or request from anyone to interfere with or rush the investigation. Go as deep as you need to. As I told you the last time we met I will be leaving Interpol soon and the last thing I want to remember is giving in to a cover up. Just let me know anything you need."

Jon hesitated for a moment, but then rushed to respond.

"I will need someone local."

"You know I can't give you an agent due to potential conflicts of interest but Izabel knows the place well."

"I need a non-uniform local. You know who I have in mind."

"Steve?" asked Martin.

"You know my son will stick his nose in anyway, so why not have him in the open from the beginning."

"I have no problem with that, but he is not a field agent."

"I don't need a field agent," Jon replied firmly. "Izabel and I are enough for now. I just need someone I can trust and who also can dig up any information we might need. I just hope they won't give you a hard time seeing as he could potentially be a suspect."

"Everyone in this city is a suspect Jon, but I would suspect myself first before suspecting Steve."

He paused for a moment and signaled at his assistant while continuing. "It's done."

Jon finished putting his suit on and started stretching his arms and legs to see how the suit responded. Everything felt like the last time he put his suit on at home. He looked at the investigation tree and it appeared as it was when he'd taken off his headcom before leaving the skimmer.

“I’m good to go,” he announced and moved on to follow the Director who was heading toward the police vehicles.

“This is where we split. My personal communication line should be in your investigation tree by now. You have priority and secure access. Let me know if you need anything.”

Without waiting for an answer, the Director entered one of the vehicles. His assistant was already in, setting the course to headquarters. Jon turned to Izabel who was already heading for the second vehicle. The vehicle was two typical police scooters connected side by side. They would move as a single unit unless there was a need for the two officers to follow separate paths, in which case they would split and become two independent scooters.

By the time Jon entered his scooter side of the vehicle Izabel had already taken control of the navigation system and set course for Puii’s quarters. An elaborate course was drawn on the merged navigation panels of the vehicle on top of a floor plan of the city. The course would take them through a series of zigzags out of the transportation hub through the South industrial zone and then follow the outer rim of the agricultural Middle-Earth and into the residential area in the North almost across from where they were.

The vehicle gently lifted to a few centimeters above the ground and started accelerating away from the jetty and toward the highway in the middle of the South sector. The floor of the driveways all around the city was infused with superconducting micromagnets to allow vehicles to levitate and move using quantum locking. All vehicles in Atlantis were built with superconducting frames that when activated would repeal the magnetic fields of the roads, lifting the vehicle up in the process. According to how the electric current would run through the frame the vehicle could thrust in the set course.

All transport vehicles in Atlantis were self-driving except for police vehicles that could be switched to manual under the control of the driver. Izabel had been in Atlantis before and she wouldn’t have trouble manually driving the vehicle, but the urgency of the situation dictated that the autopilot take over. Only by automation would they be able to maneuver fast enough around the hectic harbor traffic to their destination.

The vehicle moved through the port area, until it reached the highway of the South sector area. It was the straight transportation prism structure that was crossing their sector from the port where they were, under the overpass of the middle sections of the space ports and the runway, through the middle of the industrial zone, into the agricultural zone and all the way through the Core to the other side crossing the North sector areas. Its prism-like structure was typical for multipurpose highways that served both cargo and passengers. The flat base of the prism was dedicated to cargo transport and in its current state included two lines with wide cargo wagons traveling above and below them. The much smaller passenger lines were running above the cargo lines across the middle of the inclined prism’s faces, each supporting overpass and underpass wagons. There was also a high-speed line at the apex of the prism structure for emergency vehicles. That was the first connection to the highway Jon and Izabel reached on the way to their destination. Their vehicle followed the inclined road to the apex and then accelerated to maximum speed toward the city.

There were no other vehicles on the emergency line, but the passenger and cargo lines were in full swing with P-wagons for passengers and C-wagons for cargo moving to and from the Core.

Since there was nothing much to do on the outside, Isabel switched her focus to the case as more nodes were populating the tree. Jon on the other hand couldn't help noticing the development of the industrial section as they were rushing through factories, corporate headquarters, test fields and research centers, among others. One could tell the type and function of the various facilities based on their structural shapes. The manufacturing facilities had the typical side-by-side twin-building designs with assembly lines in one of the buildings and disassembly lines in their twin. It was a requirement in modern times that anyone who was engaged in manufacturing would ensure recycling of their products. For example, if a company wanted to produce a virtual reality home theater they would also have to be responsible for its recycling. This way the pressure for consumers to recycle had moved to the manufacturers that were profiting from the sales. When buyers were done with a device they would "sell" it back to the manufacturers for a small fraction of its price. This way the consumer was incentivized to return a product at the end of its life cycle to the people who built it. Who could be better, anyway, at taking something apart if not those who put it together in the first place? This practice would propagate upstream the supply chain until the product reached raw material form and re-enter the same or another downstream supply chain. A "retired" airplane would be broken down into pieces where it was manufactured, then each piece would be shipped to the supplier that manufactured it, for a fraction of its cost, and so on until it ended up as raw material. The last person could just re-enter the product into the same supply chain or a different one to produce new products. Except for the agricultural industry (it would be difficult to return something after it was eaten), everyone had to follow this practice to maximize recycling and minimize the impact on the environment.

Contrary to the factories, corporate headquarters were tall skyscrapers with pointed tips and artistic features as if they were trying to compete with the elevator itself. On the opposite end, test-field facilities were plain, mostly rectangular structures with a research center usually attached to them. The latter would be architectural marvels to inspire and suggest that inventions and innovations were in full swing inside of them. Most of the centers belonged to corporations but some were dedicated hospitals and universities. The exception to having organizations in industrial sections would be for a select few like the United Nations, Interpol, The World Bank and the University of Atlantis. These organizations were part of the city's identity and belonged to everyone, so their place was at the heart of the city that formed the Core.

Jon gazed at the city and the traffic that was rushing toward and from the center when Izabel's voice interrupted.

"They are ready to enter the victim's quarters, Sir."

"Tell them to wait. We'll be there in a minute."

Jon shifted his attention to the investigation tree and noticed his son's avatar doubling next to Izabel's as part of the investigation team. He focused on the contact indicator above the image and

a communication link started flashing. Izabel's attention also shifted to the new member of the team and a few flashes later Steve's voice came through the com.

"Hi dad."

"How are you Steve?"

"Good, how about you?"

"I'm in Atlantis for a special case …" He didn't manage to finish his sentence before Steve interrupted.

"Puii's death is quite shocking dad."

"How the hell…" Jon began uttering when he realized who he was talking to and concluded, "never mind."

Steve picked up the hint immediately and rushed to explain.

"I saw the news when I accepted my security clearance upgrade."

"That was seconds ago," muttered Izabel.

"Never mind," repeated Jon while looking at Izabel and nodding for her not to continue.

"Steve, this is a very delicate situation and I just want you to promise me that you won't take advantage of it."

"Daaad!" exclaimed Steve. "I'm not a teenager any more. In a few days I will be ten-grand old."

"Irrelevant, given your track record. Can you please refrain from snooping? A lot is at stake here. Can you please promise?" asked Jon emphatically.

"Yes Sir!" Steve responded in an abrupt and humorous way.

"OK, it shows you're in a class now, so we'll come pick you up about the time you'll be finishing."

He paused for a second and continued.

"By the way, this is Izabel. My second on this case and your direct point of contact."

"Nice to meet you Izabel," responded Steve.

"Same here," responded an astonished Izabel.

As the call ended, Izabel turned to Jon.

"Sir, this is your son. Shouldn't he be reporting to you?"

"Not in a million times," responded Jon. "He will drive me crazy. The last thing I want now is him suggesting theories that will bias me."

He paused for a second and continued.

"Mind you, he is mostly right. Also, he is too close to me so if things get heated up I prefer someone who is less attached than me to worry about him."

"Don't worry, Sir. I babysat drug lords, so I am sure he will be fine."

"Just go through his profile when you can. He spends a lot of time virtually, so he should have left plenty of traces to follow. We pushed him to come to Atlantis to get out a little bit, but I'm not sure how this worked out."

He turned around to gaze a little more at the city that was supposed to make his son an extrovert. They had already crossed the moat that separated the industrial section from the agricultural section of the South sector and the vehicle had turned left to follow the peripheral lane at the rim of the agricultural Middle-Earth.

He could see robots and workers attending to the fisheries in the moat to his left going about their daily activities of feeding and collecting fish to cover the needs of the city's population. On his right the farmland of Middle-Earth stretched all across the sector. The green and yellow colors of crop plantations were interrupted by farm buildings and food processing units. Fruit trees and bush patches were dispersed amongst them, adding to the variety of color of the sector. Even the roads and small alleys amongst the fields had an earth-like color to further strengthen the illusion of soil and grass. Very few structures were visible as most of the processing, maintenance and research of the sector was under the surface of the city. Having the "land" clear of tall structures was meant to add to the allure of a strip of land in the middle of the city. This also made it made easier for the city to grow under the sea than on top of it, adding more buoyancy and stability to the whole structure.

The scenery to the left changed rapidly as the vehicle crossed into the pizza slice of the city that was the South-West sector. They maintained their path around the rim of the agricultural Middle-Earth but now a residential section took the place of the industrial section they left behind. High-rise luxury hotels lay across its outer side, toward the sea, with luxury villas in-between forming the tourist seashore. Only high-paid executives and visitors could afford the villas, while most tourists and visitors had to reside in the hotels. The inner area of the residential strip was covered by golf clubs, pools, gyms and restaurants, typical for all other high-tourist island destinations in the Caribbean. Atlantis was typically the end or the beginning of many Caribbean cruises, so it had to offer at least the same level of experience as any other tourist location in the region.

What was only suggestive of its presence was the actual living quarters where the city's half million residents were living. A construction site near the middle of a golf court where a residential block had just been installed would only worsen the puzzle. It was a Rubik's cube-like structure with all its faces in gray except the top that looked like the missing golf course piece. If only someone could push the cube down so the top was at the same level as the rest of the area, the puzzle would be complete. This was a typical structure for a residential block in Atlantis with 24 cubelet apartments, or quarters as the residents used to call them, forming the pieces of the cube. The only area that was not apartments was the three vertical cubelets in the center of the cube. They would form the elevator and stairs that allowed residents to move up and down between the surface

and the floor of their quarters. They would also channel water and electricity downwards while transferring to the surface in the opposite direction recycling waste for processing. Each cubelet was a huge open space that each occupant could shape to their taste with walls and internal doors as they pleased. The only exceptions were the bathrooms and kitchen spaces that were already preinstalled in the sections of the cubelets that were attached to open central cubelets.

The whole structure was about to take its 10-minute ride downwards to its destination. The construction of a cube would typically start somewhere in an industrial segment where the apartments would be 3D-printed into their final shape. Then the decorative landscape and recreational section of their destination would be transferred from the residential area onto the top of the new cube and everything would be moved to its final destination on top of the existing cube. The whole structure would then be pushed down into the sea until its top reached the surface-level position and the puzzle was once again complete. If demand was high, they could add 2–3 cubes on top of each other in one instance and push them all down in one move.

It seemed weird at first, to think that someone would want to grow the city into the water instead of up into the air but there were multiple reasons for the popularity of such designs in floating colonies, and particularly the ones the mining industry was building. The volume of each cube underwater would add to the total buoyancy of the floating city and make it easier to support the growing weight of the city, and in Atlantis's case the weight of the elevator too. Additionally, the modularity of each cube was beneficial in cases of emergency like a tsunami if the forces of nature prevailed over the whole structure. Each cubelet apartment was hermetically sealed from the rest of the apartments and the cube as a whole. If needed the cubes could be jettisoned under water and even broke into its individual cubelets like a small explosion pushes every outer cell of a bomb away from its center. One after the other from the bottom up the cubes could shed their sealed cubelets into the water away from any damage the city structure might experience. Each cubelet or a whole cube would then float to the surface and wait for the rescue ships to arrive. The occupants could even open hatches at the top to get out of their apartment if needed, although the sealed interior would be safer in any weather condition it would face. The only requirement for the safety of the occupants during the jettison process would be to secure themselves in emergency pods that would be raised near the door when alarms were triggered. Their glass shields were hard enough to withstand collisions from any objects that might be flying around as the cubelet tumbled in the water.

The South-East residential section fast gave way to the West industrial section with similar content as the South section they'd docked at. The lift-off of a cargo spaceship was the only distraction for Jon along with Izabel's voice announcing their arrival as they crossed into the North-West residential sector. Their vehicle left the peripheral route of the Middle-Earth at the intersection with the North-West highway and entered the residential area. Soon after they turned left at the first highway exit, they drove around some recreational complexes until they reached their destination. Puii's "neighborhood" (as they called the surface sections above the residential cubes) was part of a park that extended through patches and pathways across the whole residential section. Evergreen and ornamental trees were positioned around jogging tracks with benches and small ponds spread around. Here and there dense patches with bushes and trees gave

the semblance of forest areas. A few picnic areas and some Victorian-style gazebos complemented the green space.

The city's tracks were ideal for jogging and many residents and visitors would get their share of exercising this way. The most famous of all was the Atlas path at the outer rim of the city. It crossed outer sectors to form a circular strip of greenery. Joggers could circumvent the city crossing each section and the walkways over the moats. A yearly Marathon run was established to promote the city and bring everyone together. Similar events for smaller paths were regularly organized from each residential area that saw itself as a suburb of the city. Elevators and staircase exits from the cubes below would be the only disruptions to the scenery and the only indicator that there was life below the surface.

Incidence team vehicles, a paramedic's ambulance and guards outside one of the exits were a clear indication of where Jon and Izabel's vehicle was heading. Some curious bystanders that were overlooking the guards turned around to see the newcomers as they were getting out of their scooters. Some joggers passing by also slowed down to look in the direction of the commotion. People made way to the two Interpol agents as they were approaching the staircase. The guards were already familiar with who they were and nodded as they passed by and into the elevator. A few seconds later they were on the third floor of the second cube down across from Puii's apartment. Jon exited the elevator first, saluting the incidence team group outside the quarter's door. There was no sign of forced entry on the door other than what the team did to access the interior.

"The room is ready for inspection, Sir," reported Chen, the leader of the incidence team.

"Let's get in lieutenant," responded Jon.

Chen nodded to one of the team members who overrode the apartment controls and got access to the butler opening the door of the apartment.