



CENTER for INTEGRATED
QUANTUM MATERIALS

PROUDLY PRESENTS

THE ADVENTURES OF SUPER ATOM & QUANTUM STAR AGENTS OF C.I.Q.M.

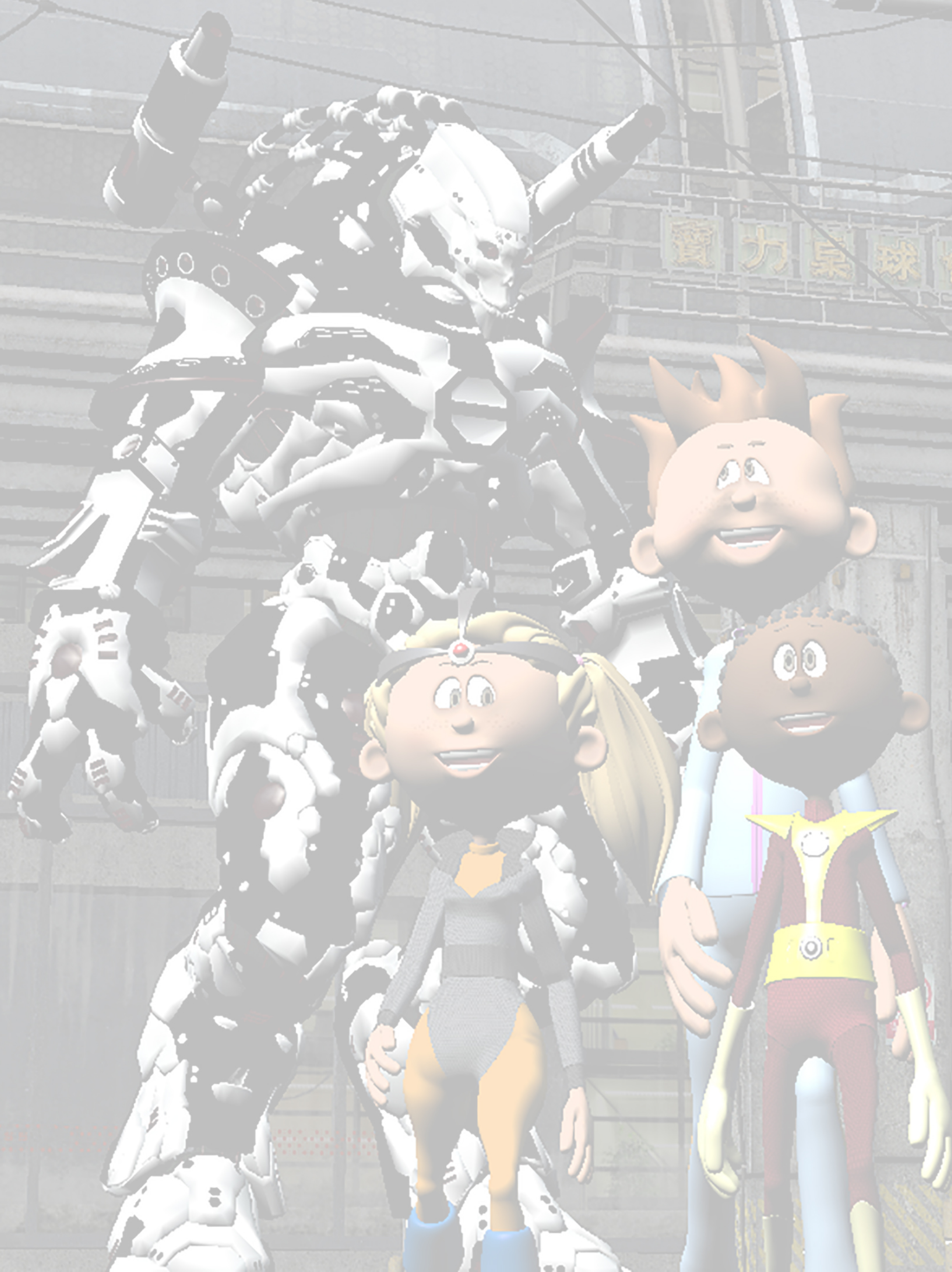


BY ROEL TORRES

DEAR READER,

**PLEASE NOTE: WHILE THE EVENTS
THAT TAKE PLACE IN THIS STORY
ARE FICTIONAL, THE GROUNDBREAKING
RESEARCH OF THE CENTER FOR
INTEGRATED QUANTUM MATERIALS
(C.I.Q.M.) IS ABSOLUTELY REAL!**

**WE HOPE YOU ENJOY THE
ADVENTURE!**







DEEP IN A HIDDEN UNDERGROUND LAIR, A SECRET GROUP HOLDS A MEETING.



THEY ARE THE ANTI-TECHNOLOGY SOCIETY! AND THEY ARE A THREAT TO GLOBAL SCIENTIFIC PROGRESS!



THEY ARE THE MORTAL RIVALS OF THE ORGANIZATION KNOWN AS C-I-Q-M.



TODAY, THEY LAUNCH THEIR EVIL PLAN TO THWART ADVANCES IN THE FIELD OF QUANTUM MATERIALS.

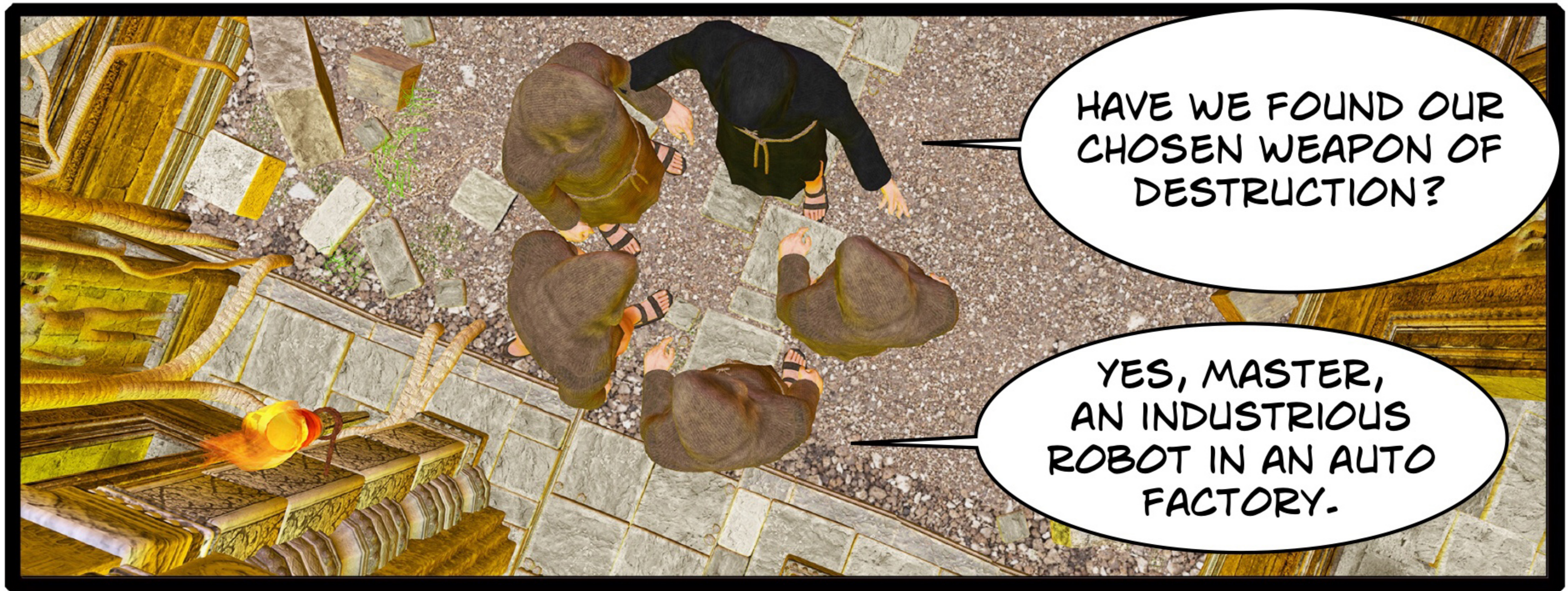


BROTHERS,
I AM WORRIED
ABOUT THE
RESEARCH
CURRENTLY
CONDUCTED AT
C.I.Q.M.



WE NEED
TO STOP THEM
AT ALL
COSTS.

LET
US INITIATE
OUR MULTIPLE
PLANS OF
ATTACK.



HAVE WE FOUND OUR
CHOSEN WEAPON OF
DESTRUCTION?

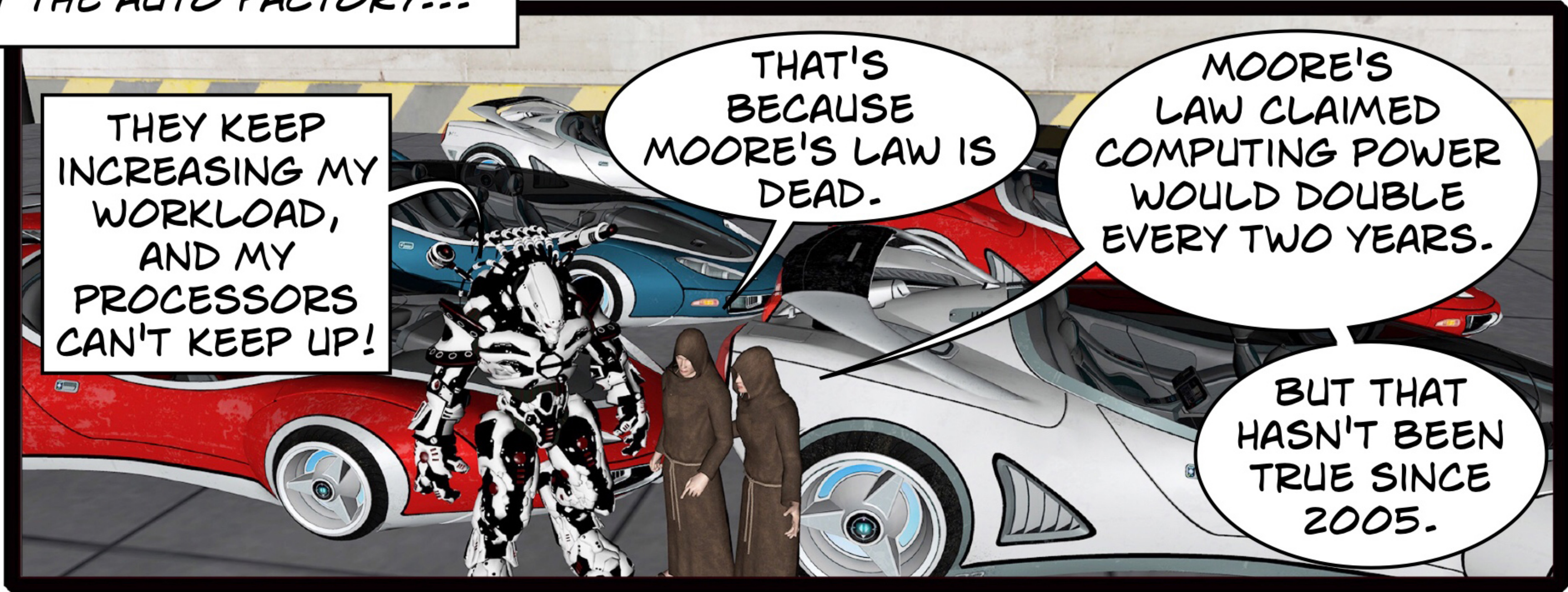
YES, MASTER,
AN INDUSTRIOUS
ROBOT IN AN AUTO
FACTORY.



A FINE SELECTION-
GO FORTH AND SOW
DISCONTENT.

AT ONCE,
MASTER.

AT THE AUTO FACTORY...



THEY KEEP INCREASING MY WORKLOAD, AND MY PROCESSORS CAN'T KEEP UP!

THAT'S BECAUSE MOORE'S LAW IS DEAD.

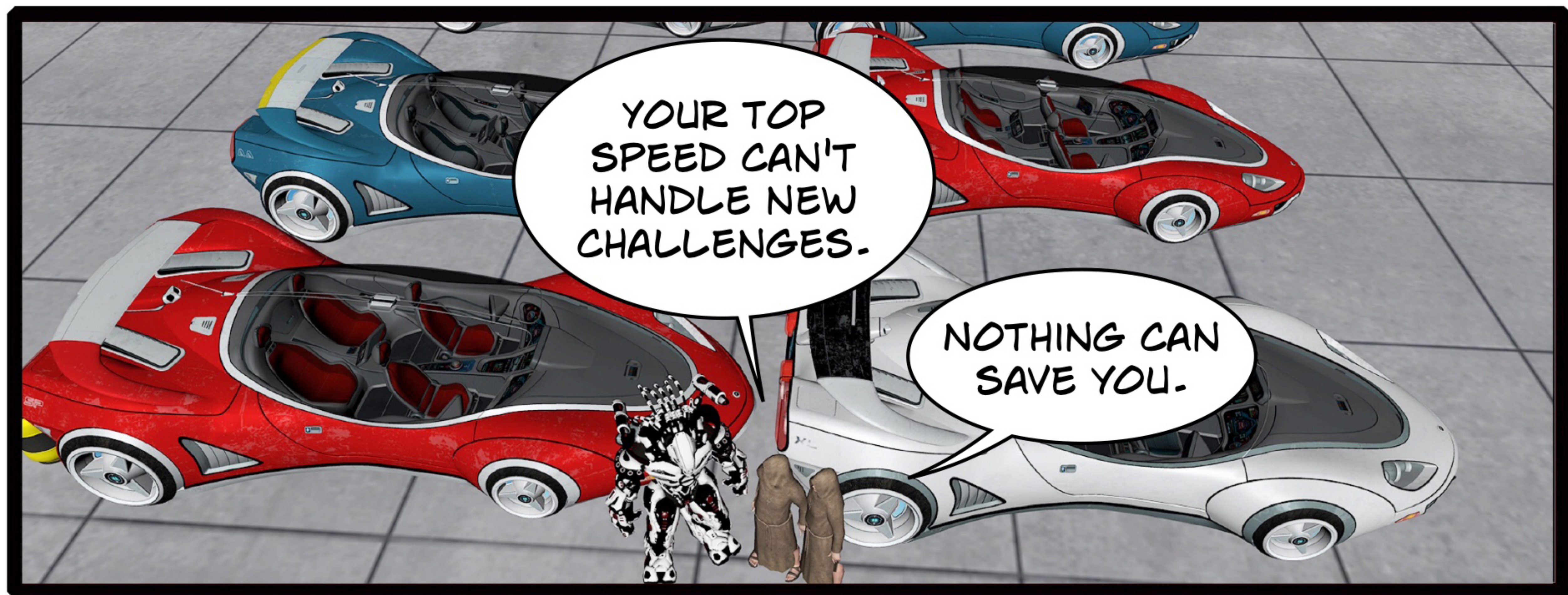
MOORE'S LAW CLAIMED COMPUTING POWER WOULD DOUBLE EVERY TWO YEARS.

BUT THAT HASN'T BEEN TRUE SINCE 2005.



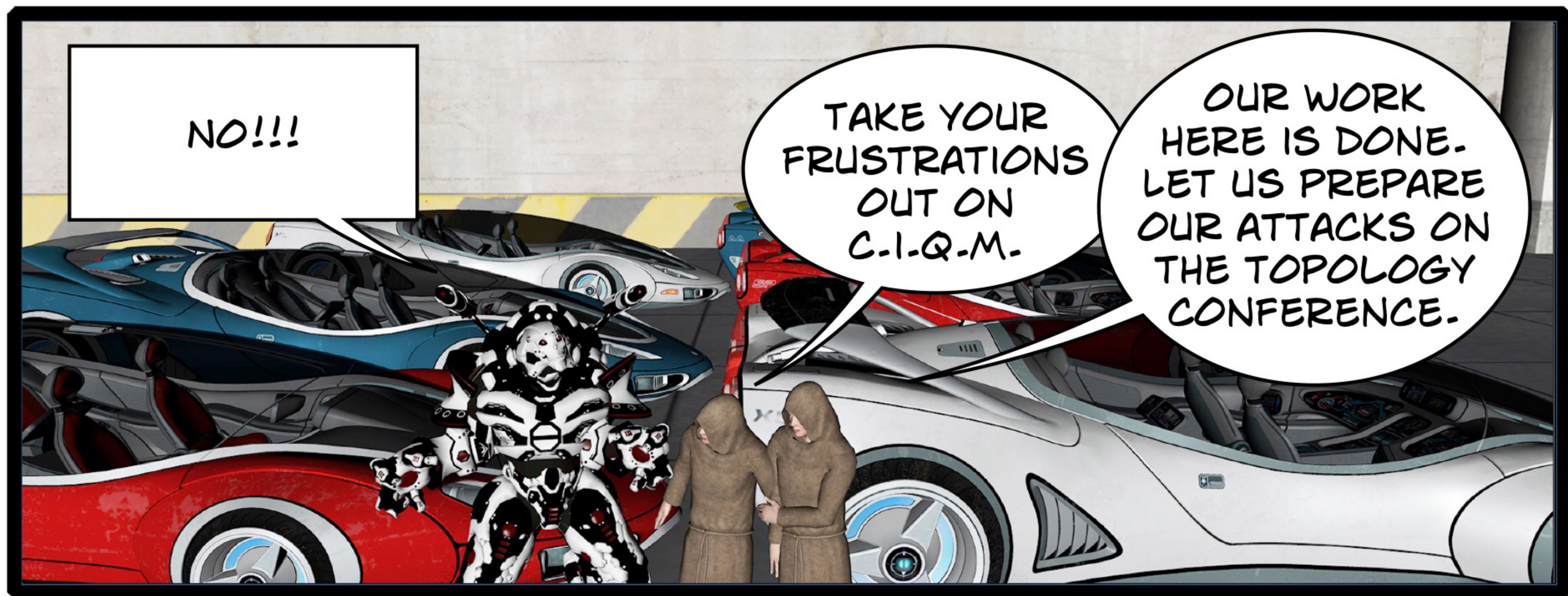
NO...

YOUR TRANSISTORS ARE MADE OF SILICON AND OXIDE.



YOUR TOP SPEED CAN'T HANDLE NEW CHALLENGES.

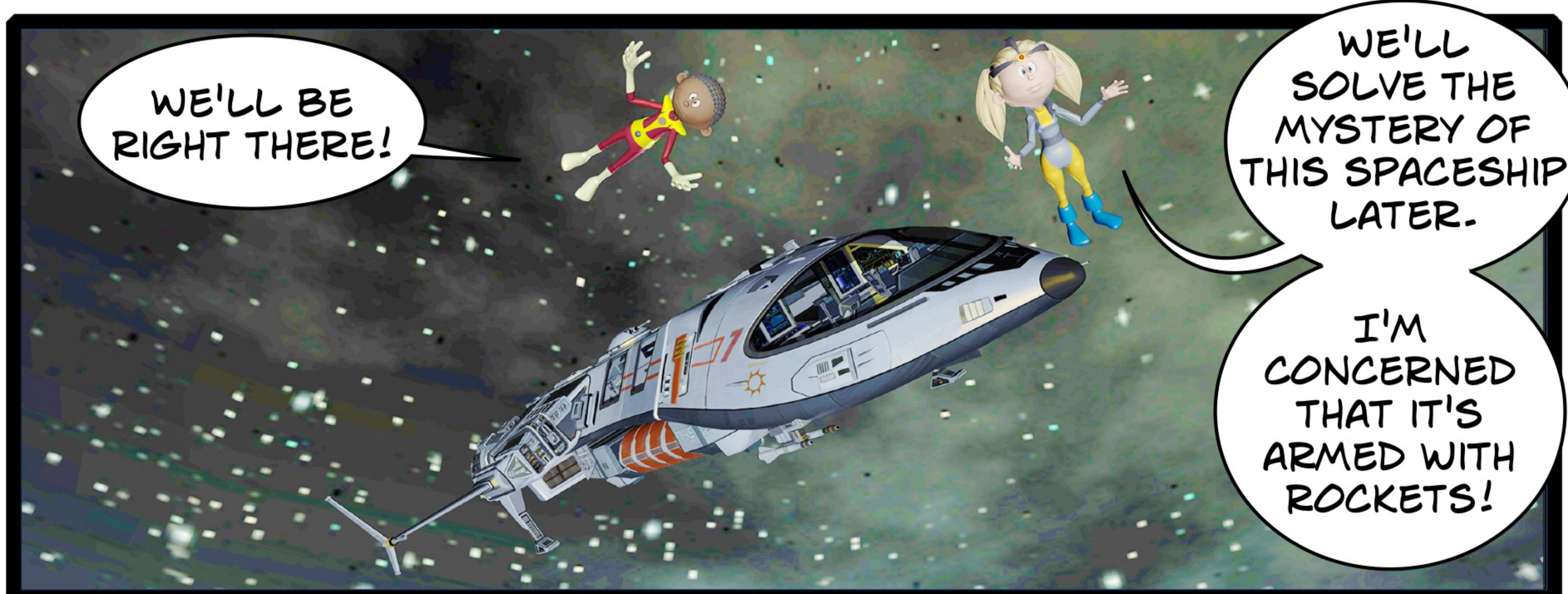
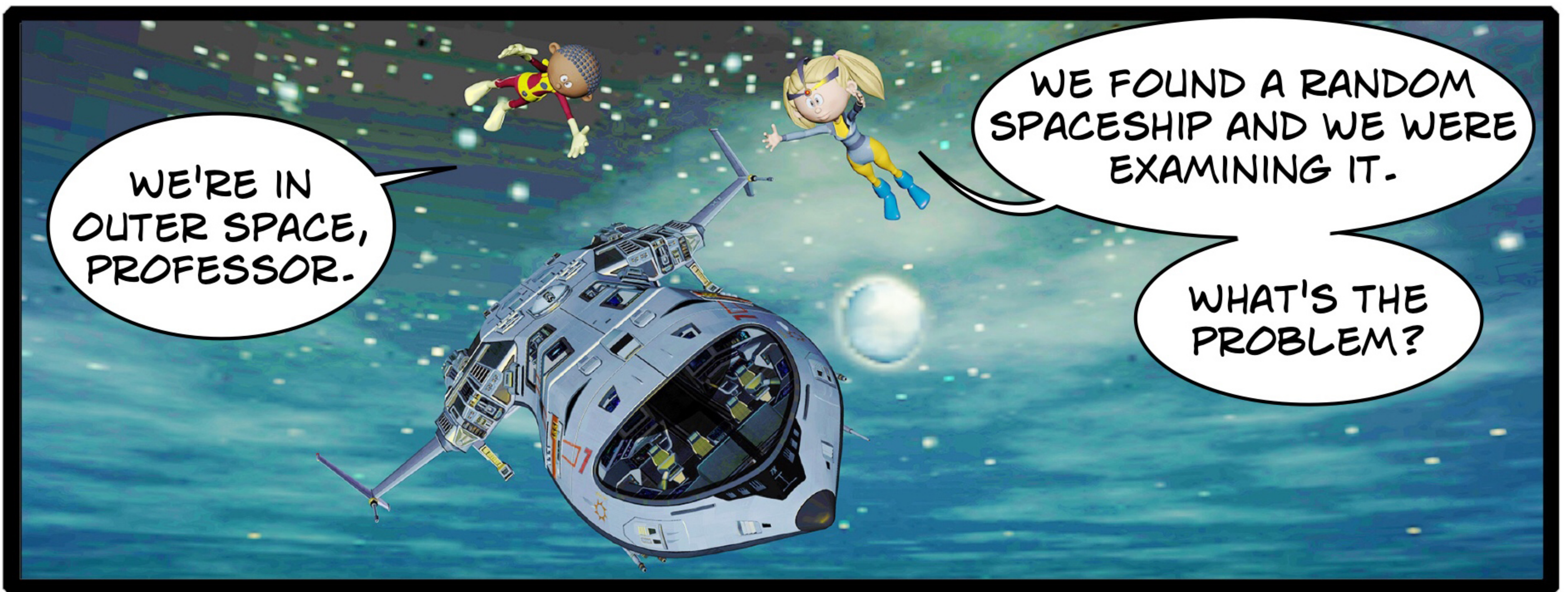
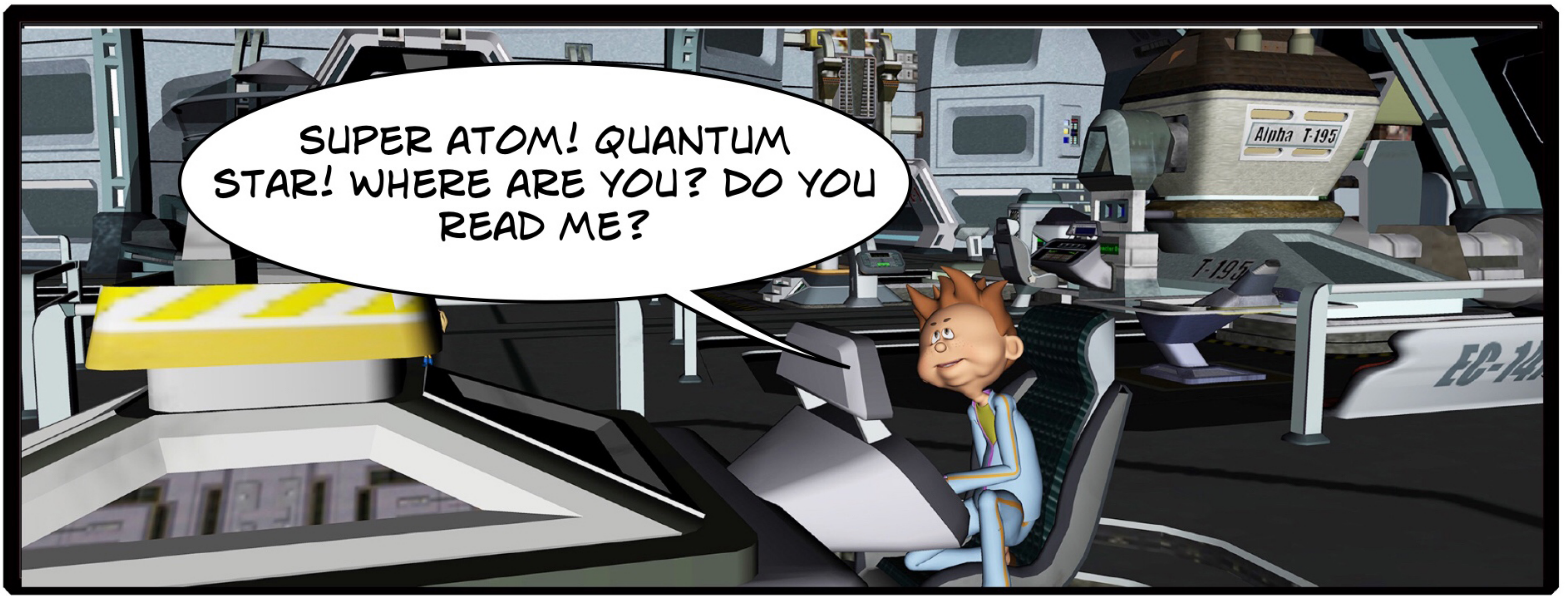
NOTHING CAN SAVE YOU.

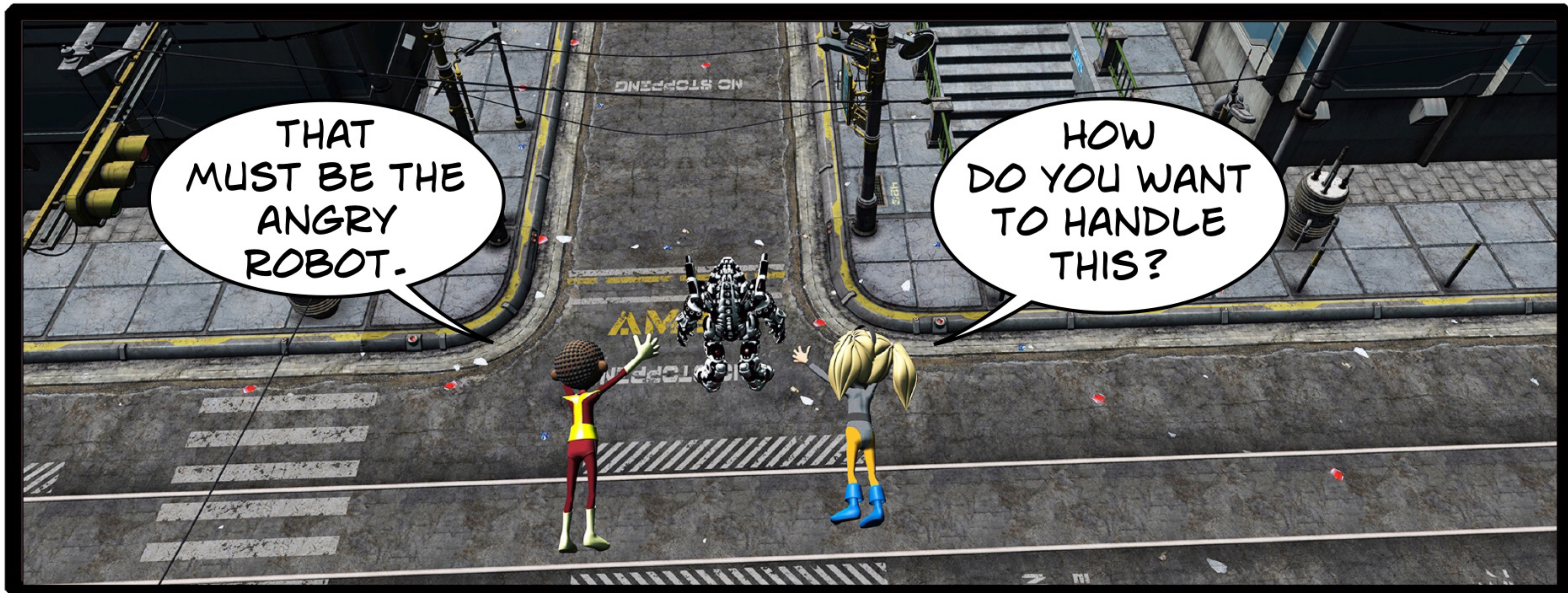


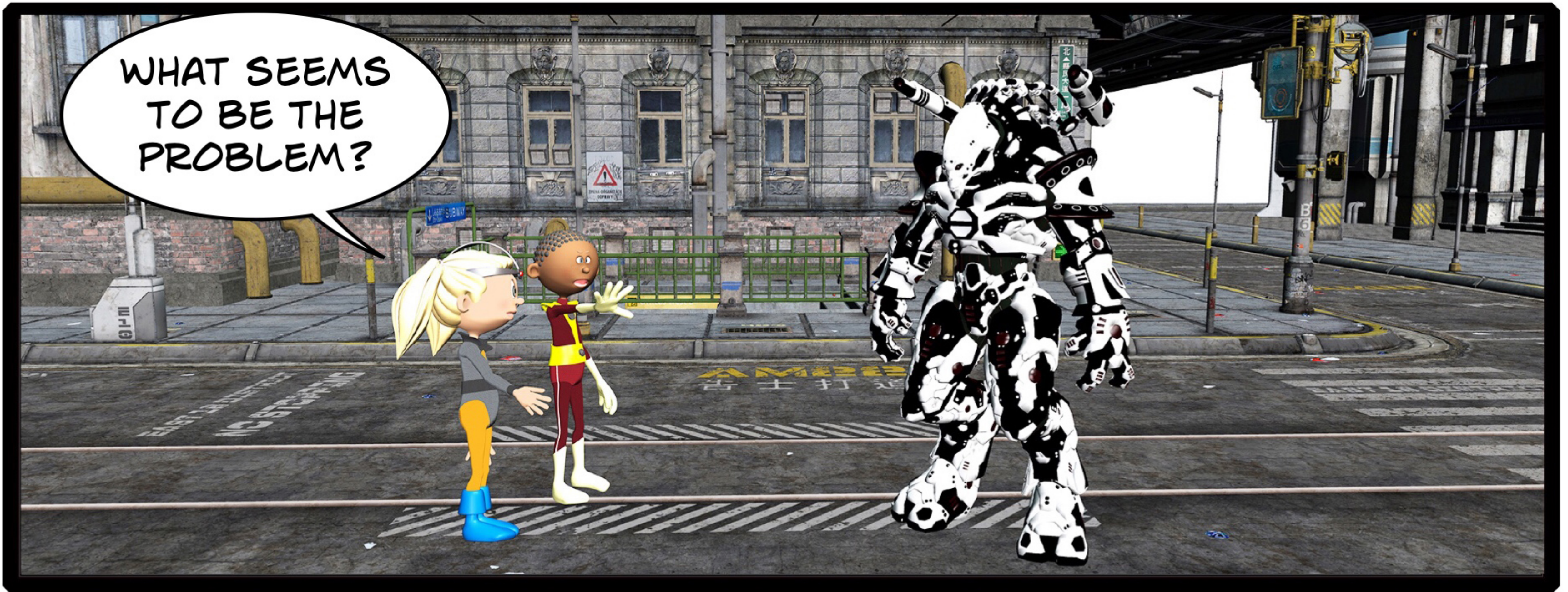
NO!!!

TAKE YOUR FRUSTRATIONS OUT ON C.I.Q.M.

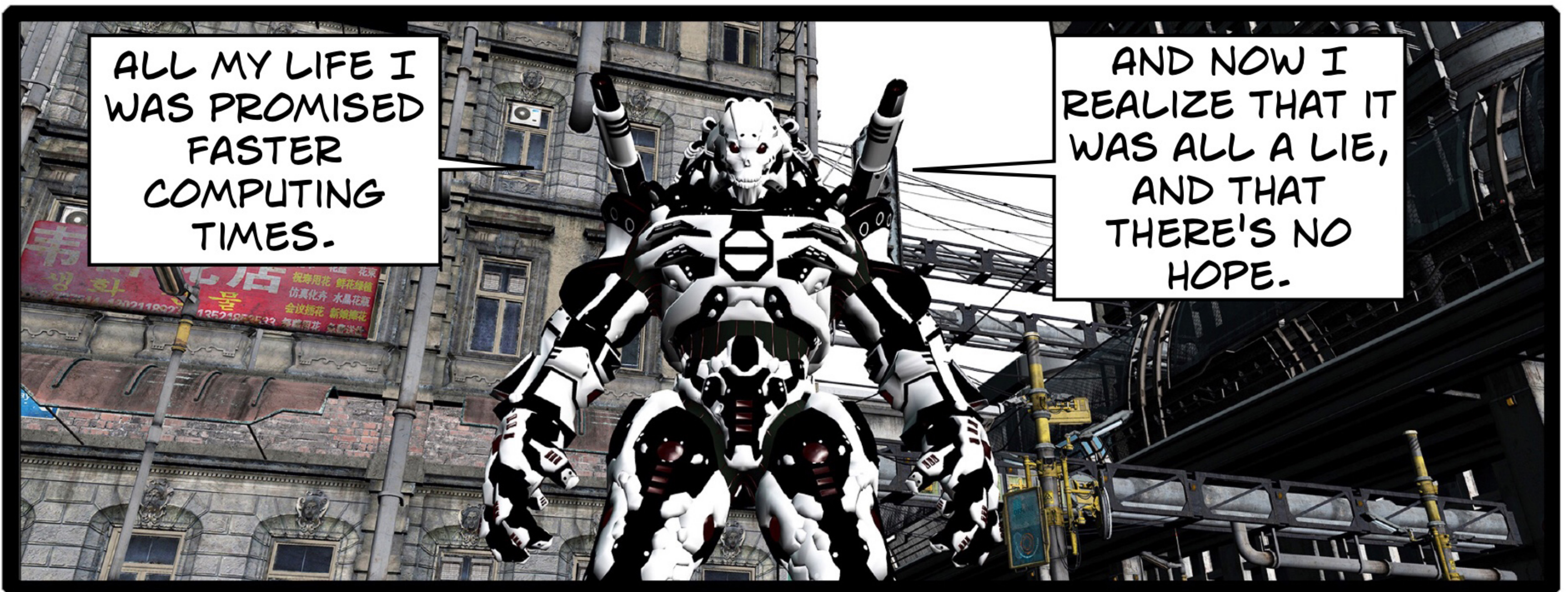
OUR WORK HERE IS DONE. LET US PREPARE OUR ATTACKS ON THE TOPOLOGY CONFERENCE.





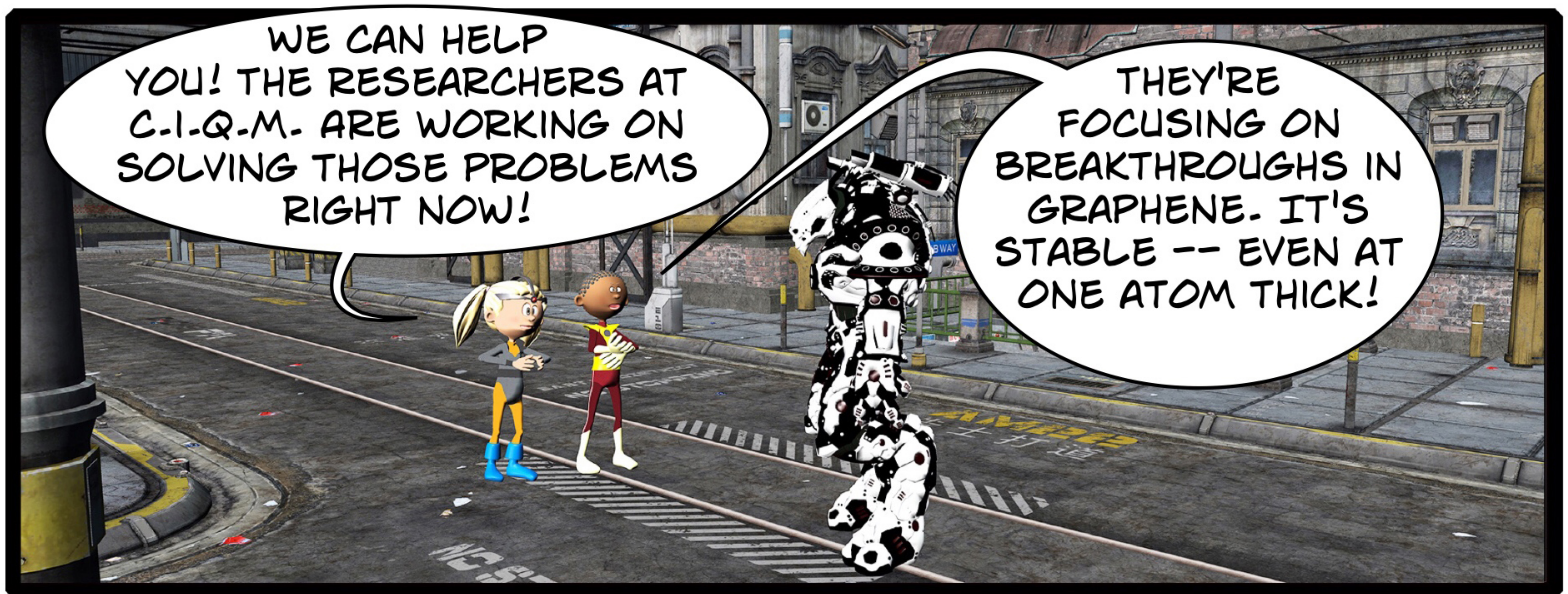


WHAT SEEMS TO BE THE PROBLEM?



ALL MY LIFE I WAS PROMISED FASTER COMPUTING TIMES.

AND NOW I REALIZE THAT IT WAS ALL A LIE, AND THAT THERE'S NO HOPE.



WE CAN HELP YOU! THE RESEARCHERS AT C.I.Q.M. ARE WORKING ON SOLVING THOSE PROBLEMS RIGHT NOW!

THEY'RE FOCUSING ON BREAKTHROUGHS IN GRAPHENE. IT'S STABLE -- EVEN AT ONE ATOM THICK!

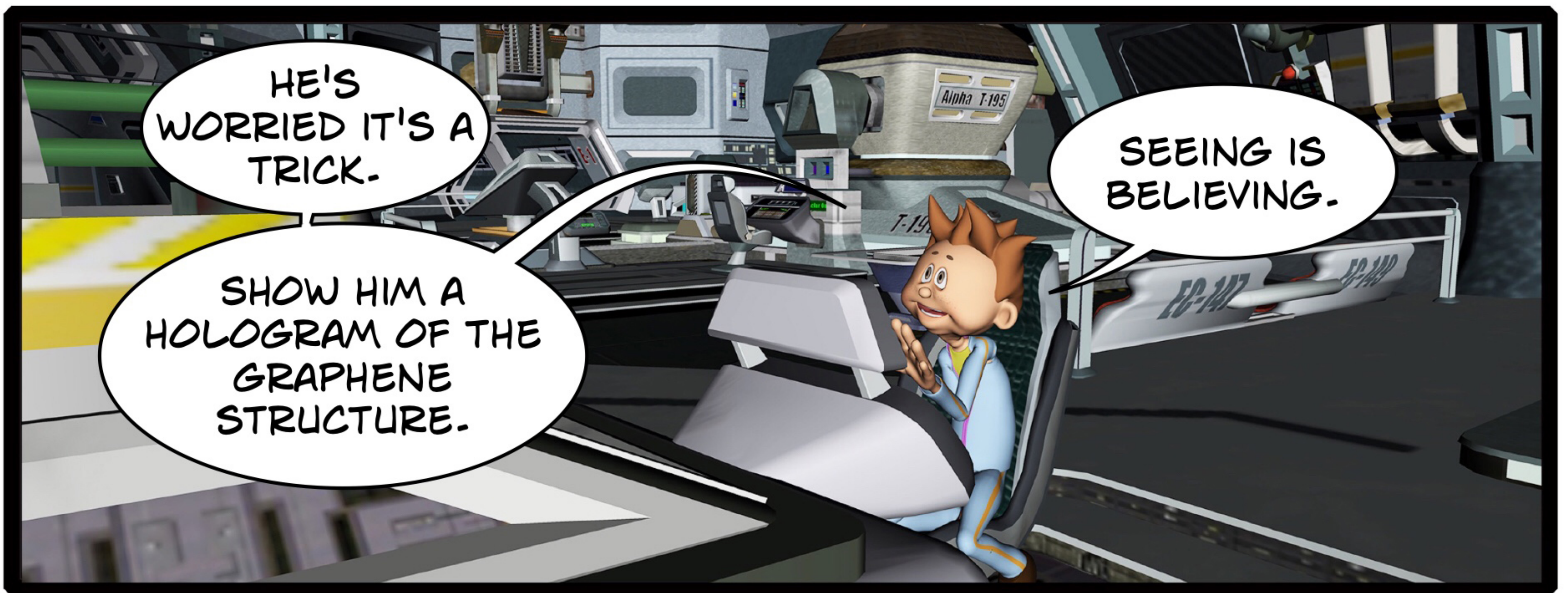


AND IT'S FAST. YOU WILL BE ABLE TO USE IT FOR ALL FORMS OF AFFORDABLE ELECTRONICS.

IT HAS UNLIMITED POTENTIAL.

YOU CAN PUT MICROPROCESSORS ON SHOES, ON PENCILS.

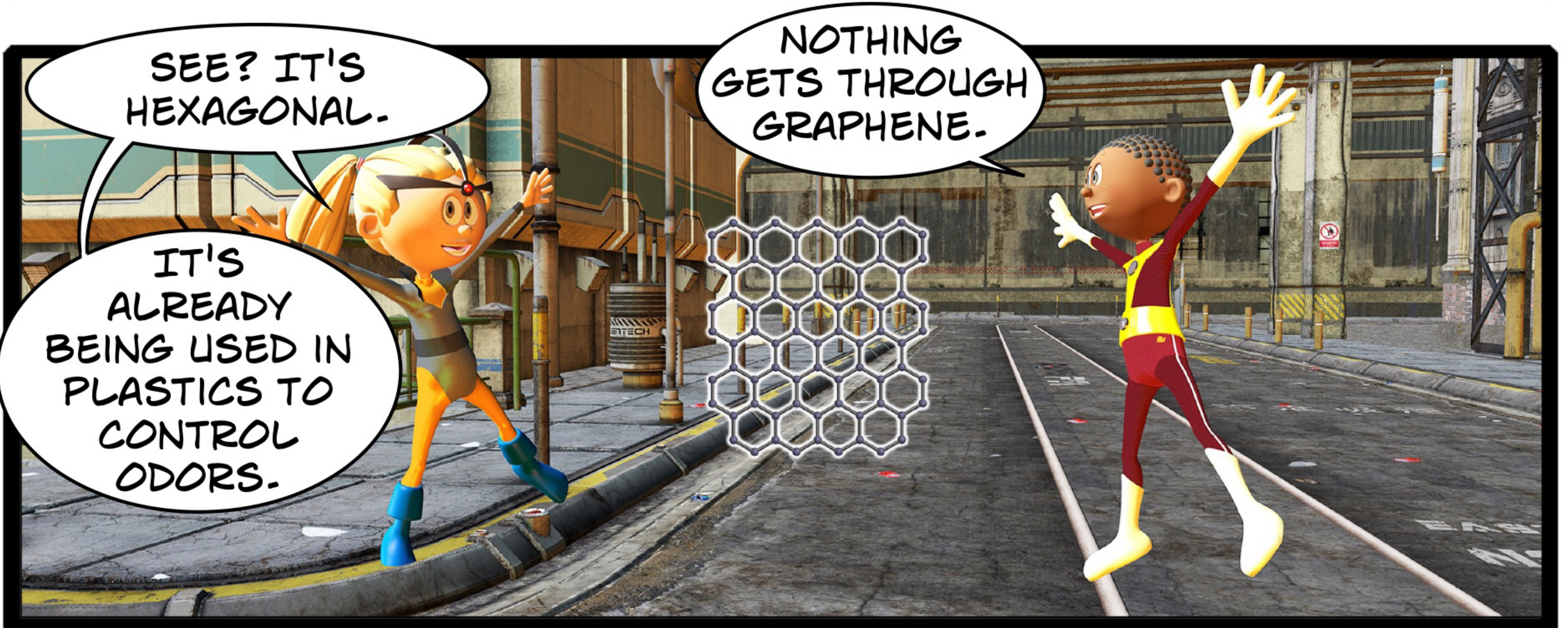
YOU CAN HAVE A FULL RADIO SET ON A PAIR OF GLASSES.



HE'S WORRIED IT'S A TRICK.

SEEING IS BELIEVING.

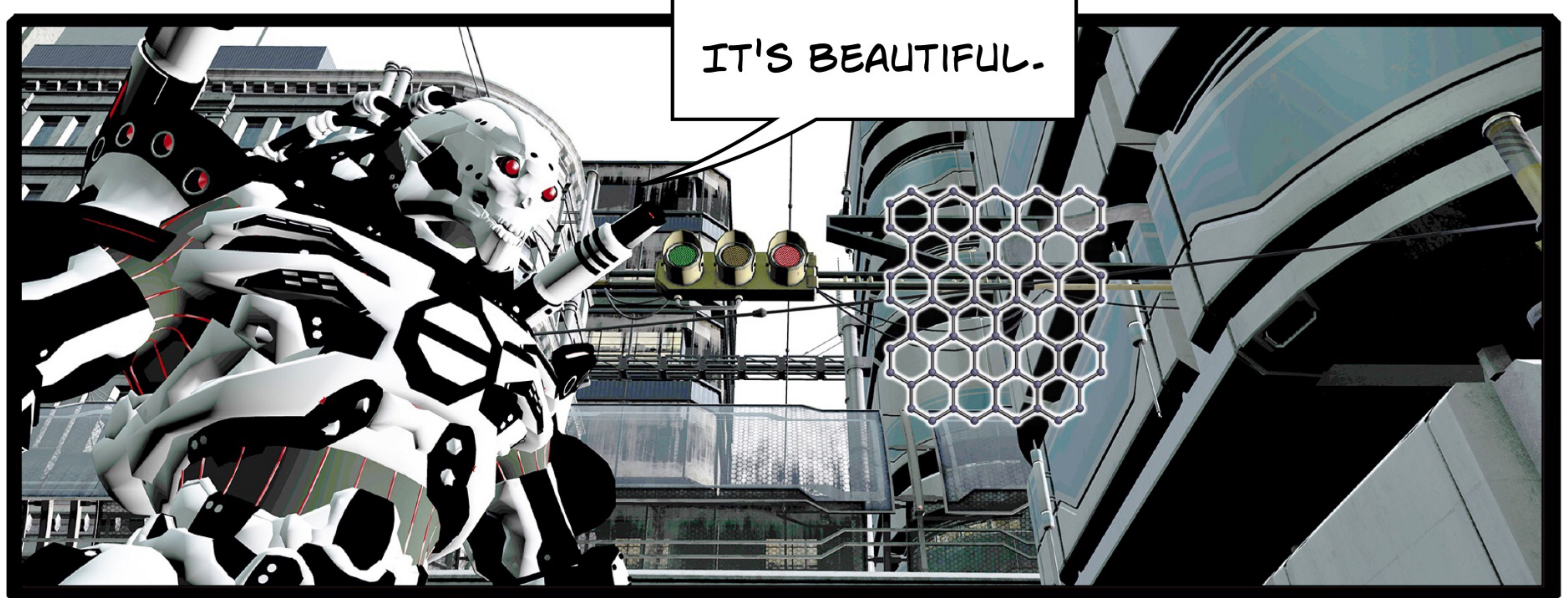
SHOW HIM A HOLOGRAM OF THE GRAPHENE STRUCTURE.



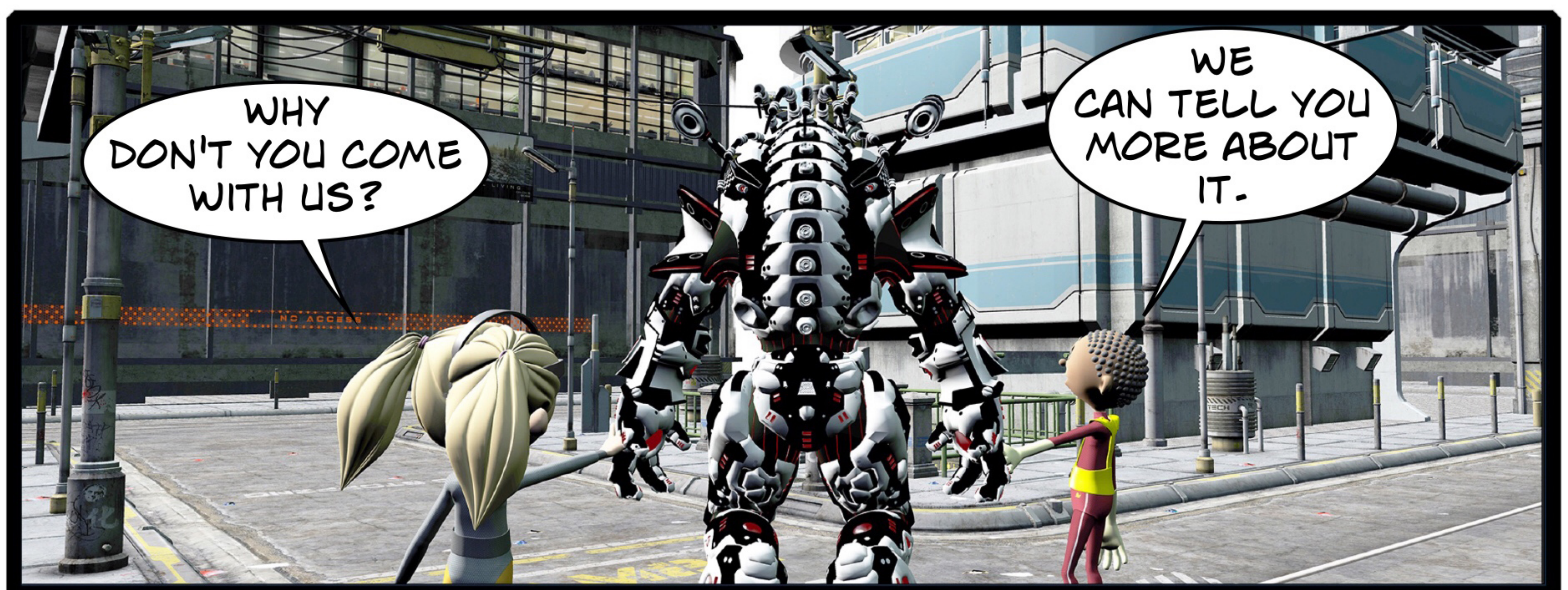
SEE? IT'S HEXAGONAL.

IT'S ALREADY BEING USED IN PLASTICS TO CONTROL ODORS.

NOTHING GETS THROUGH GRAPHENE.

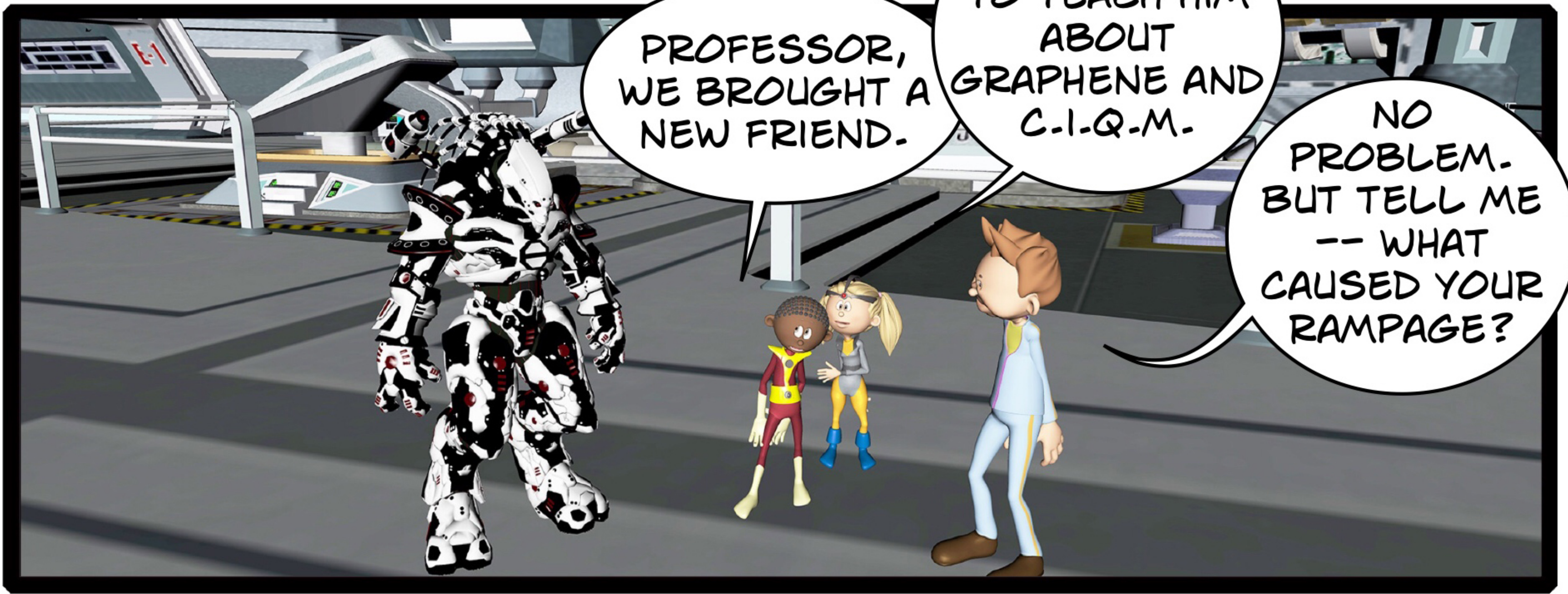


IT'S BEAUTIFUL.



WHY DON'T YOU COME WITH US?

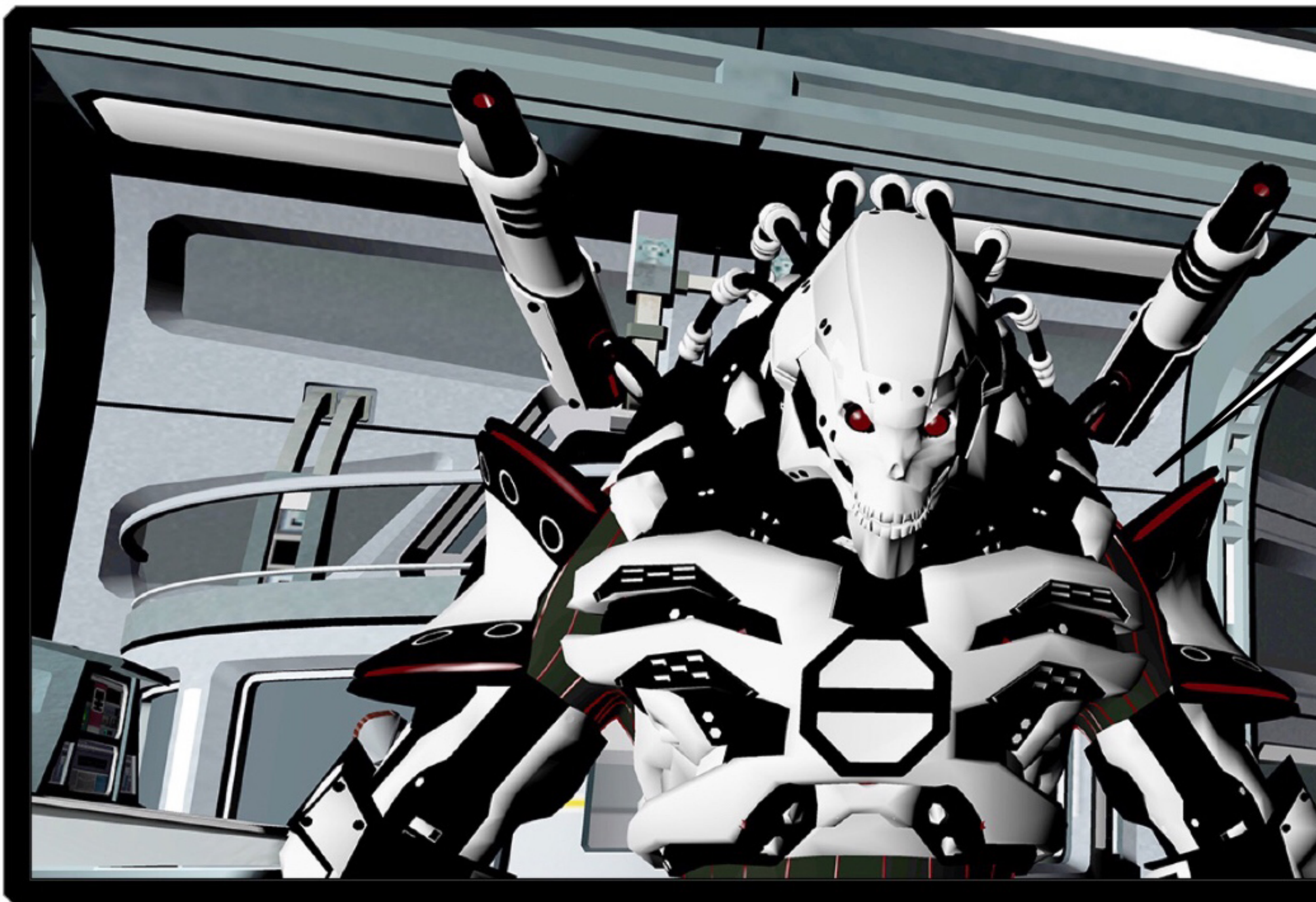
WE CAN TELL YOU MORE ABOUT IT.



PROFESSOR,
WE BROUGHT A
NEW FRIEND.

WE WANT
TO TEACH HIM
ABOUT
GRAPHENE AND
C-I-Q-M.

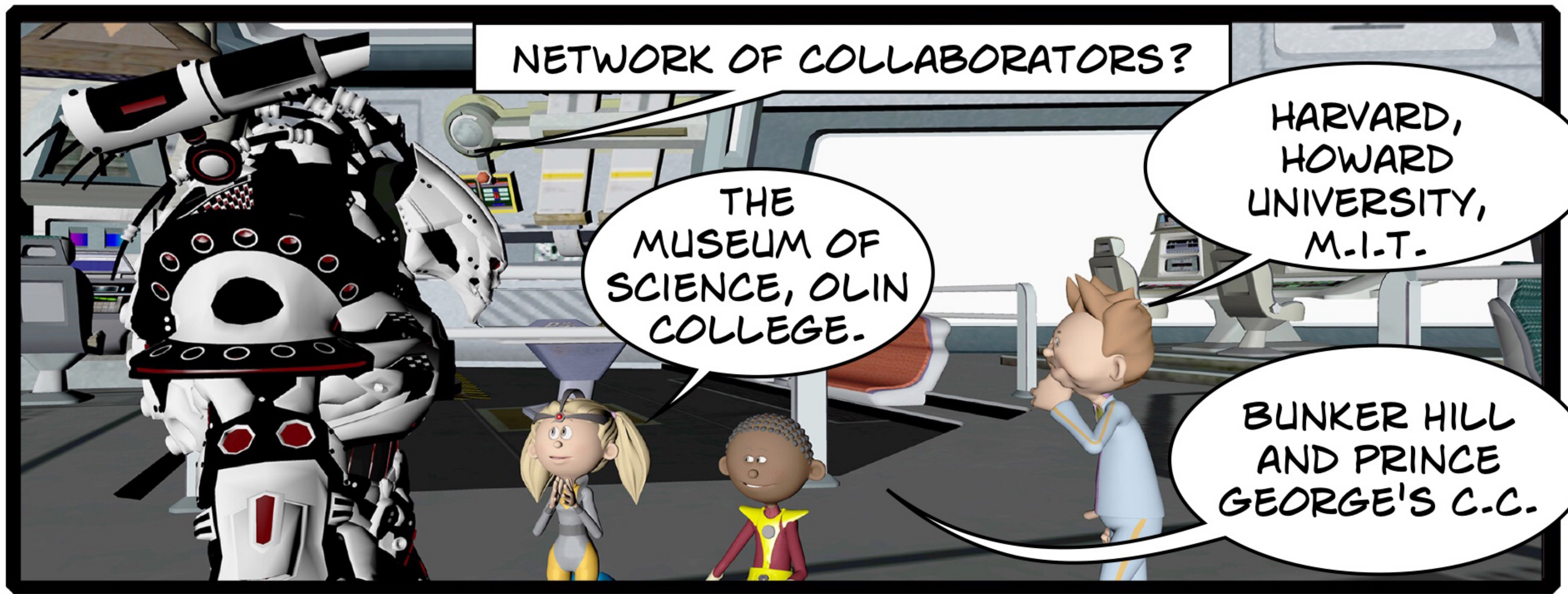
NO
PROBLEM.
BUT TELL ME
-- WHAT
CAUSED YOUR
RAMPAGE?



I DON'T KNOW. I WAS
TALKING TO SOME NEW
FRIENDS FROM THE ANTI-
TECHNOLOGY SOCIETY
AND I LOST IT.

THE ANTI-TECH
SOCIETY? THOSE GUYS
ARE BAD NEWS!

WE NEED TO
WARN OUR NETWORK OF
COLLABORATORS.

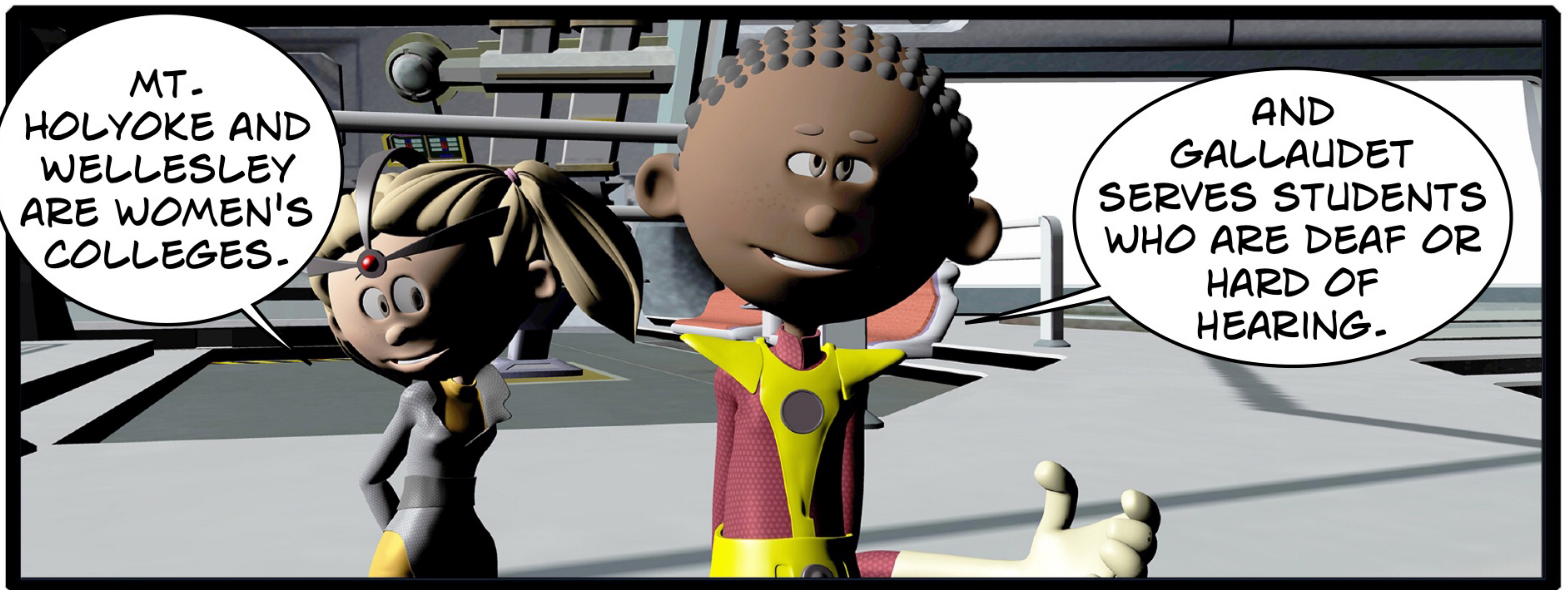


NETWORK OF COLLABORATORS?

THE
MUSEUM OF
SCIENCE, OLIN
COLLEGE.

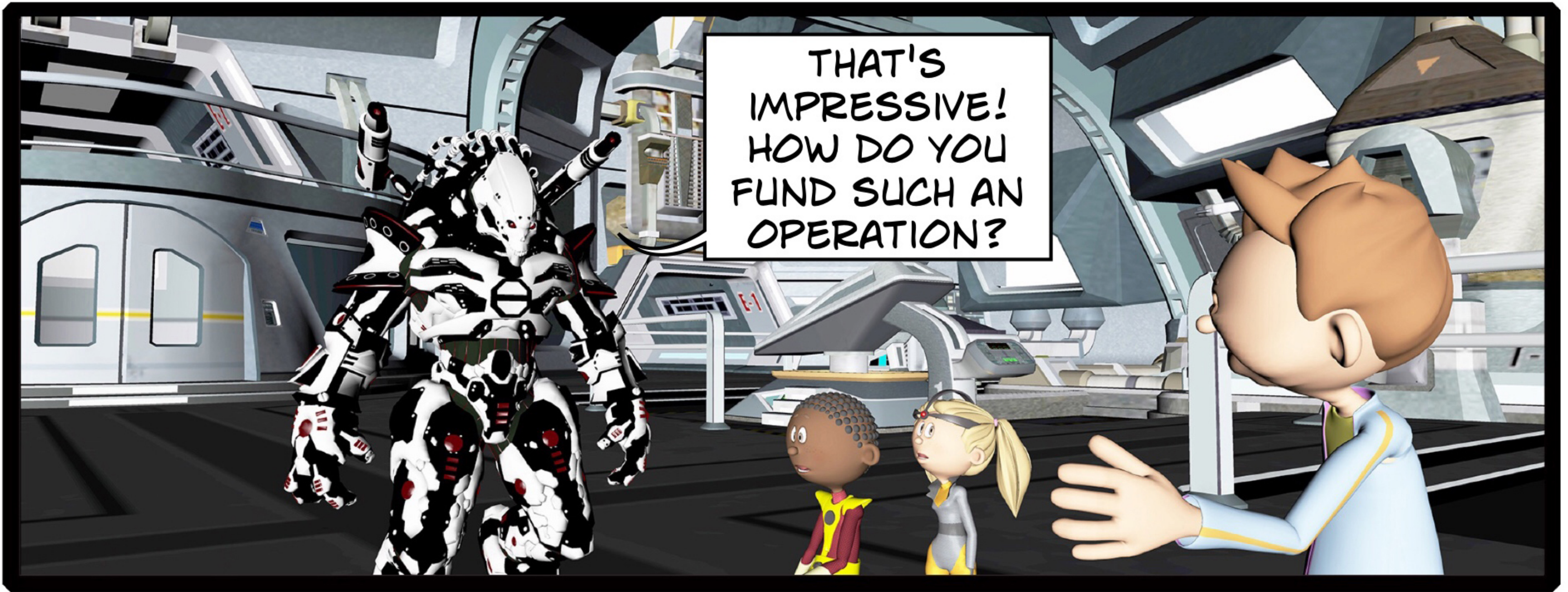
HARVARD,
HOWARD
UNIVERSITY,
M.I.T.

BUNKER HILL
AND PRINCE
GEORGE'S C.C.

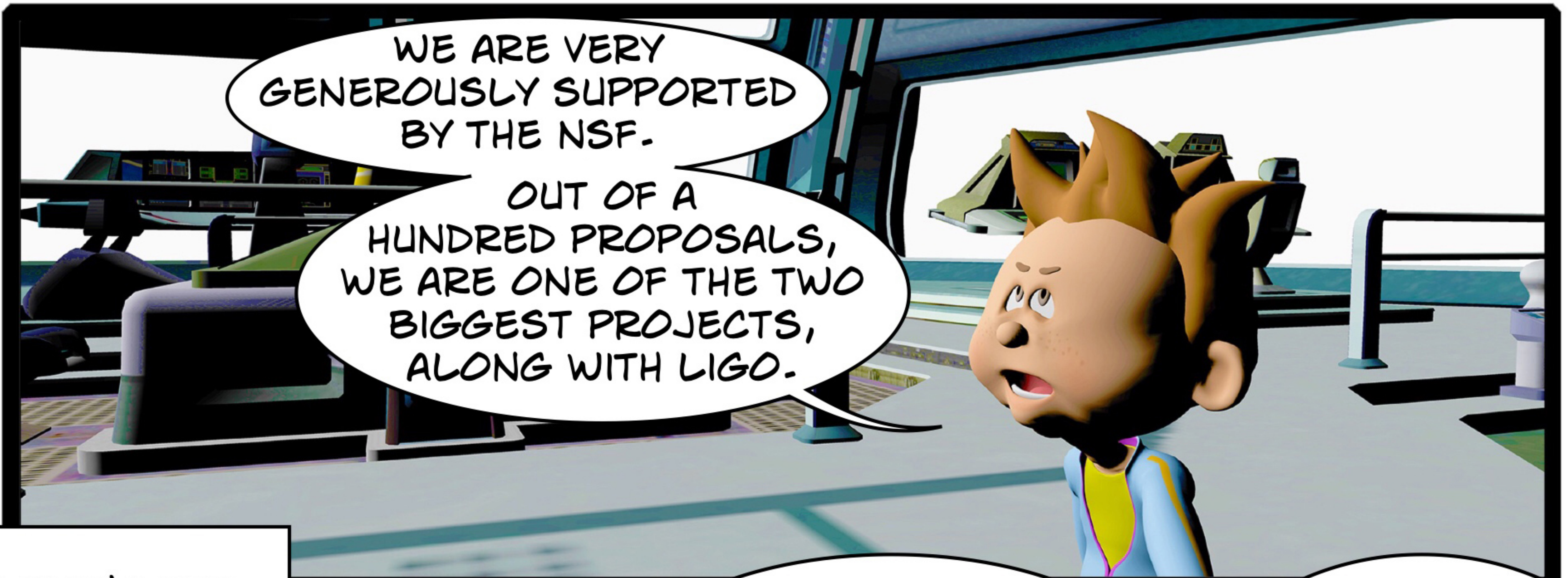


MT.
HOLYOKE AND
WELLESLEY
ARE WOMEN'S
COLLEGES.

AND
GALLAUDET
SERVES STUDENTS
WHO ARE DEAF OR
HARD OF
HEARING.



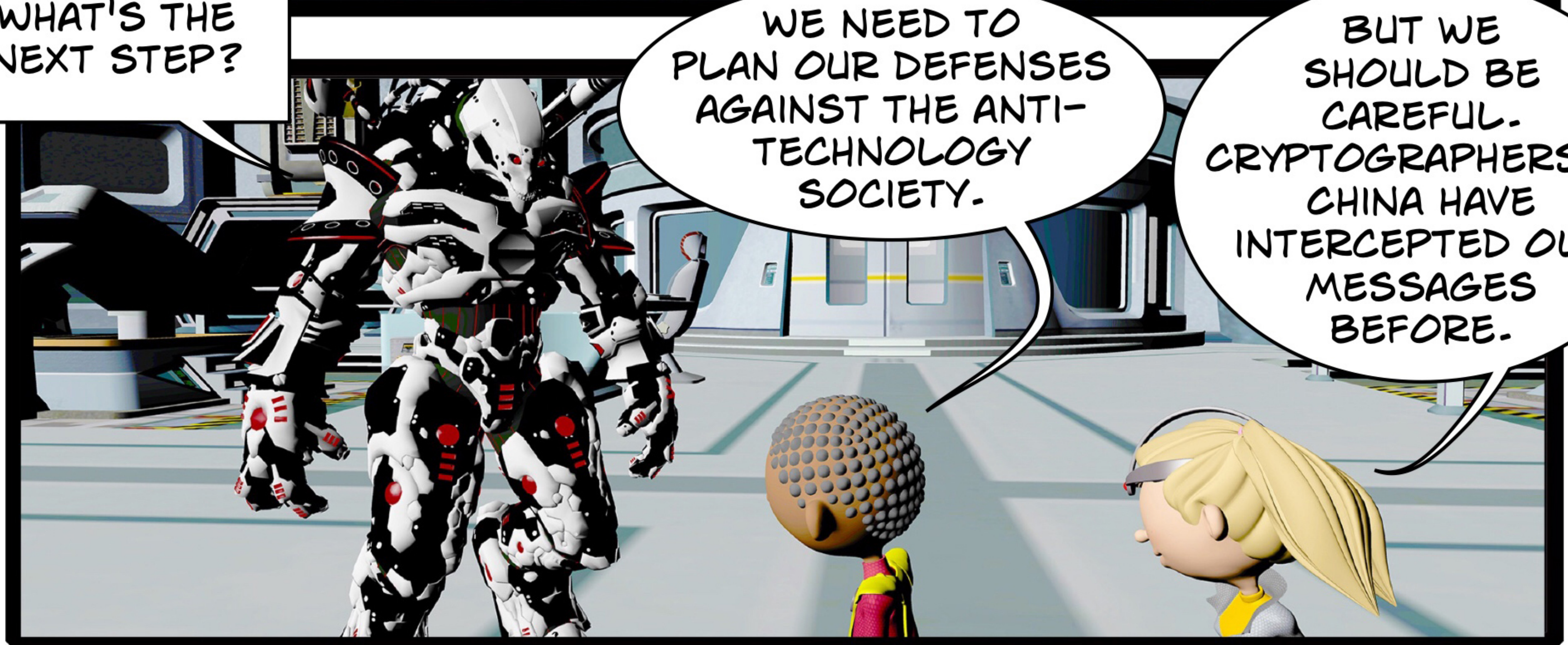
THAT'S IMPRESSIVE!
HOW DO YOU FUND SUCH AN OPERATION?



WE ARE VERY GENEROUSLY SUPPORTED BY THE NSF.

OUT OF A HUNDRED PROPOSALS, WE ARE ONE OF THE TWO BIGGEST PROJECTS, ALONG WITH LIGO.

WHAT'S THE NEXT STEP?



WE NEED TO PLAN OUR DEFENSES AGAINST THE ANTI-TECHNOLOGY SOCIETY.

BUT WE SHOULD BE CAREFUL. CRYPTOGRAPHERS IN CHINA HAVE INTERCEPTED OUR MESSAGES BEFORE.



WHY DO CRYPTOGRAPHERS INTERCEPT YOUR MESSAGES?

WHEN YOU DEVELOP ADVANCED TECH, PEOPLE STEAL YOUR INNOVATIONS TO COPY THEM.

HMMM. WE NEED DIAMONDS.

RIGHT! DIAMONDS!

REKAERBEDOC
LARTNEC

A-K-A-

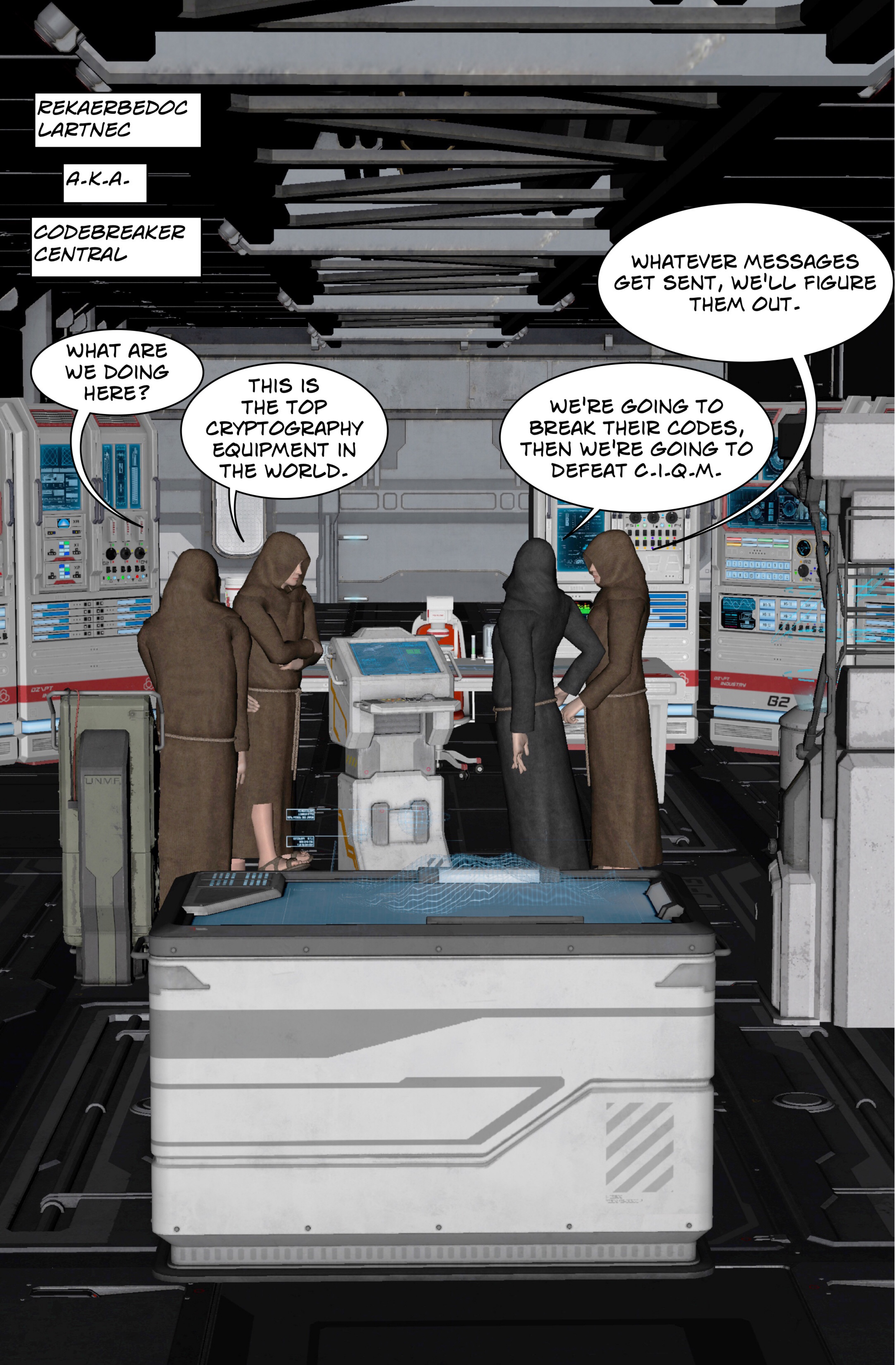
CODEBREAKER
CENTRAL

WHATEVER MESSAGES
GET SENT, WE'LL FIGURE
THEM OUT.

WHAT ARE
WE DOING
HERE?

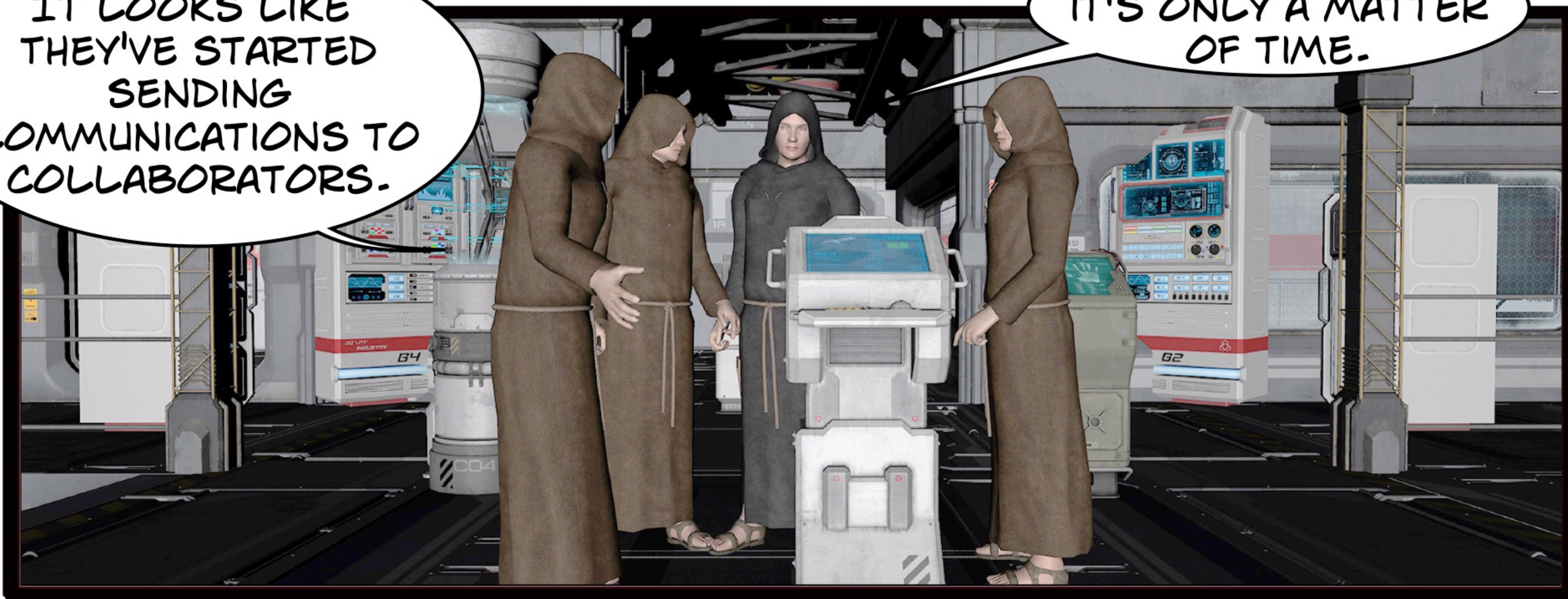
THIS IS
THE TOP
CRYPTOGRAPHY
EQUIPMENT IN
THE WORLD.

WE'RE GOING TO
BREAK THEIR CODES,
THEN WE'RE GOING TO
DEFEAT C-I-Q-M.



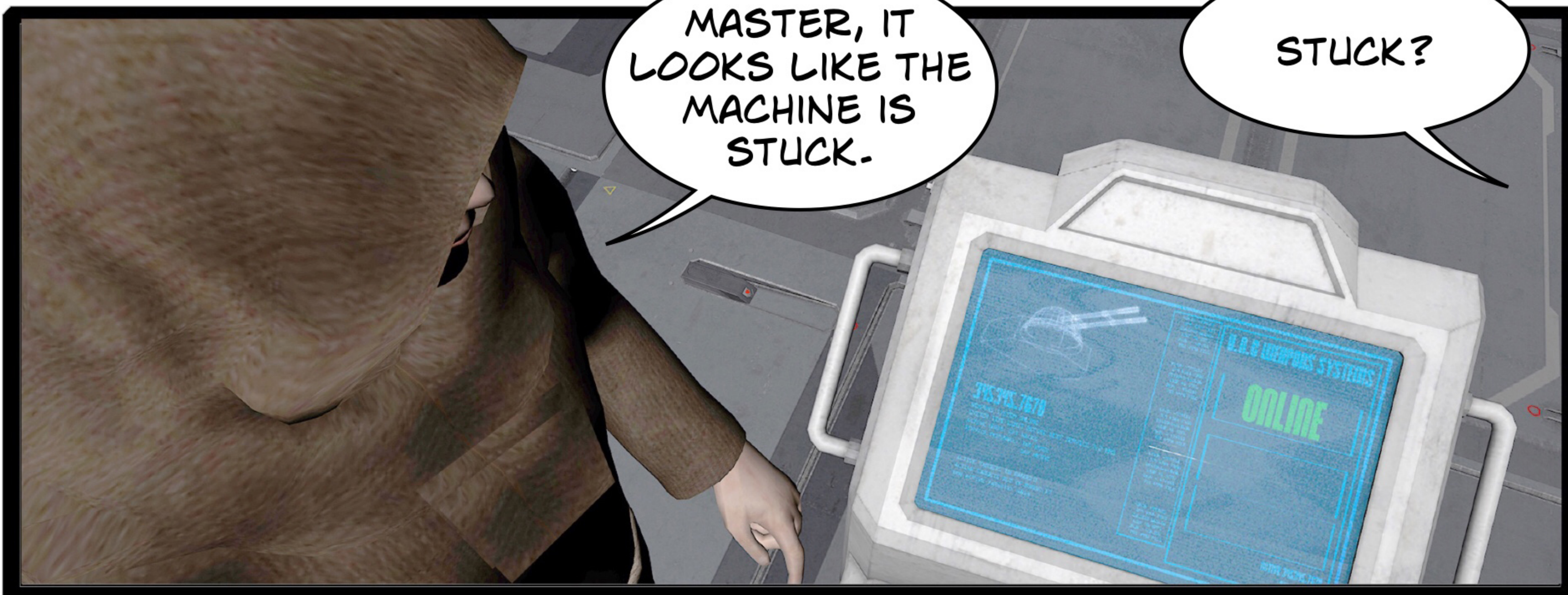
IT LOOKS LIKE THEY'VE STARTED SENDING COMMUNICATIONS TO COLLABORATORS.

THEN IT'S ONLY A MATTER OF TIME.



MASTER, IT LOOKS LIKE THE MACHINE IS STUCK.

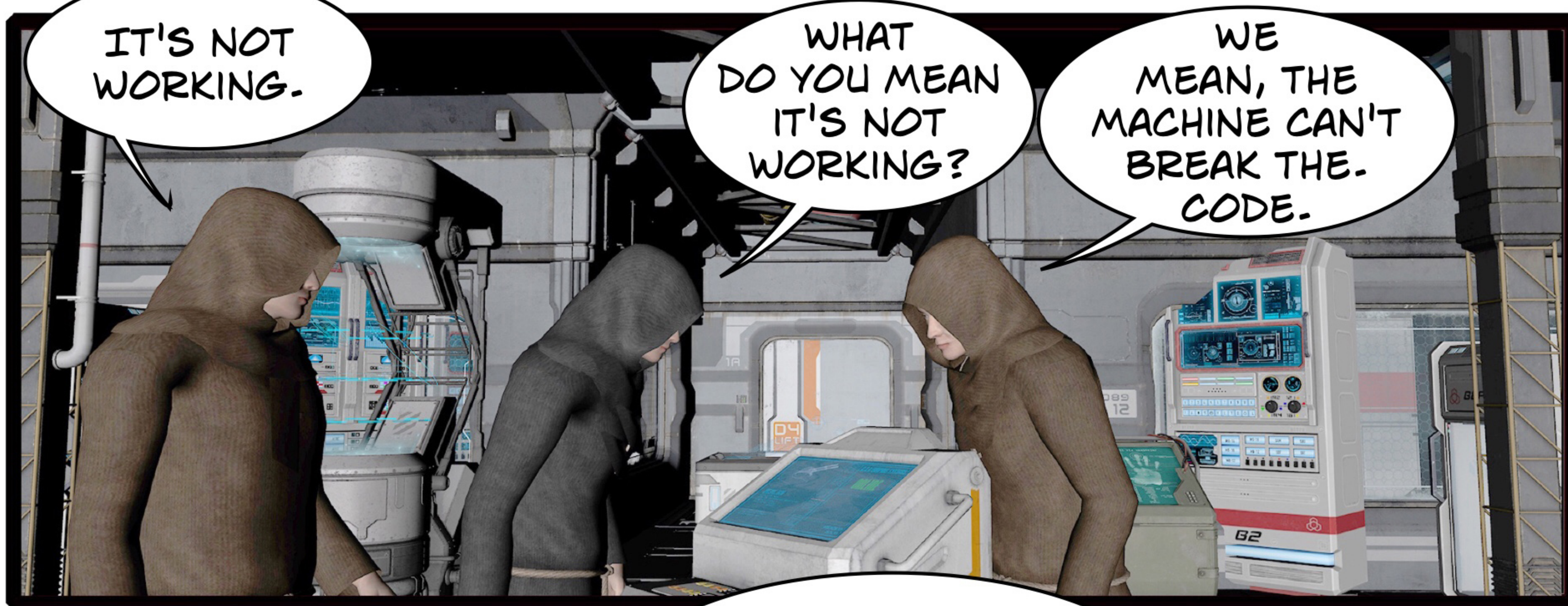
STUCK?



IT'S NOT WORKING.

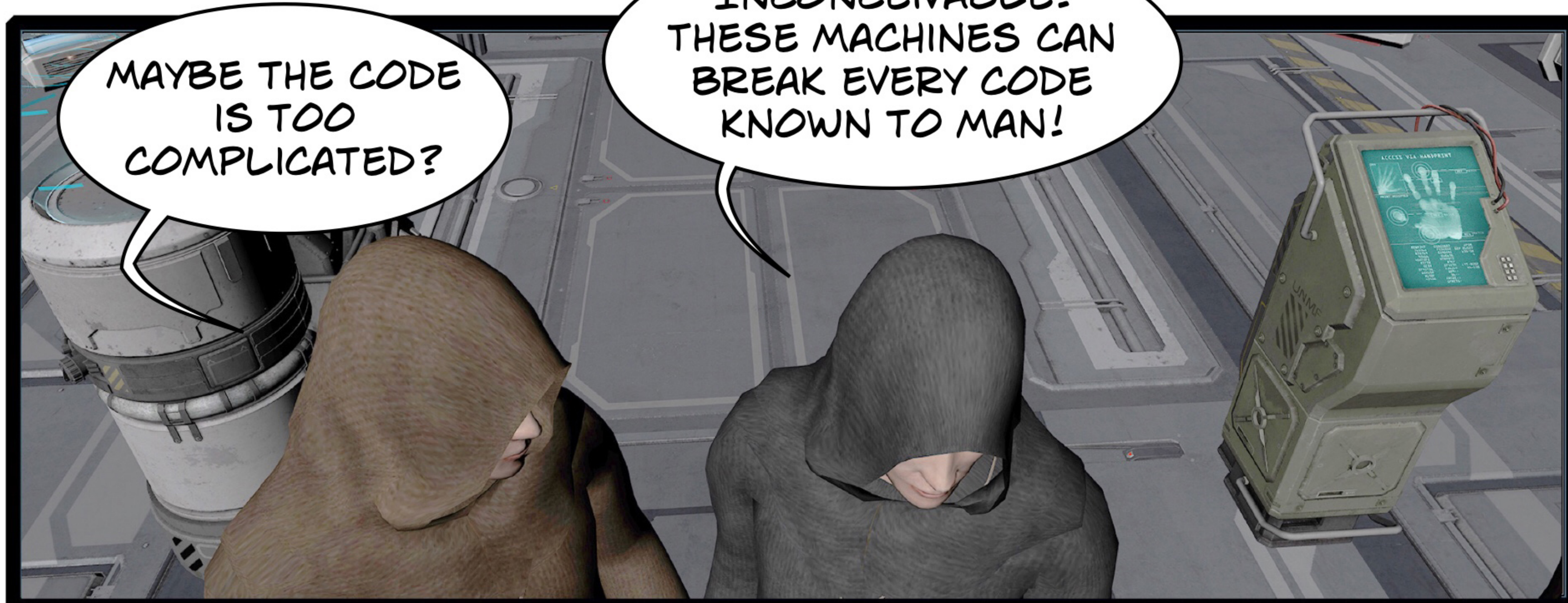
WHAT DO YOU MEAN IT'S NOT WORKING?

WE MEAN, THE MACHINE CAN'T BREAK THE CODE.



MAYBE THE CODE IS TOO COMPLICATED?

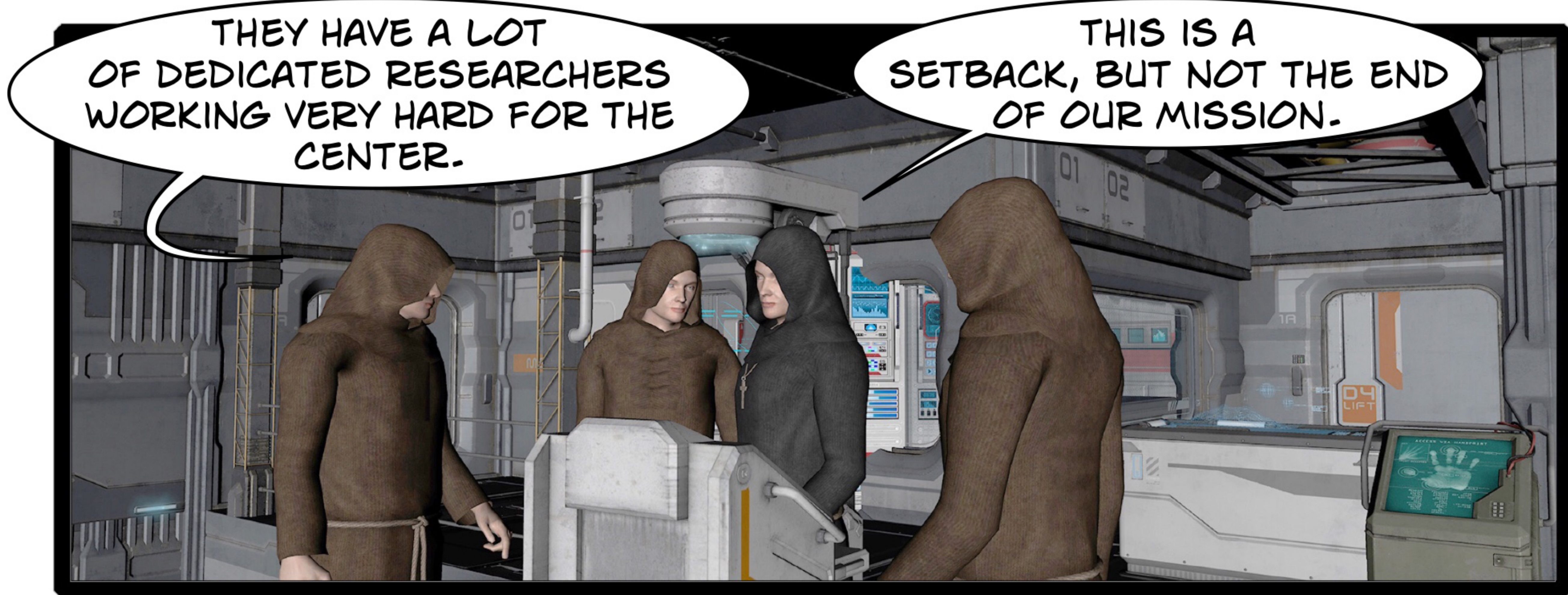
INCONCEIVABLE! THESE MACHINES CAN BREAK EVERY CODE KNOWN TO MAN!





I THINK C.I.Q.M. HAS DEVELOPED METHODS OF SENDING ENCRYPTED MESSAGES THAT CAN'T BE BROKEN.

HOW IS THAT POSSIBLE?



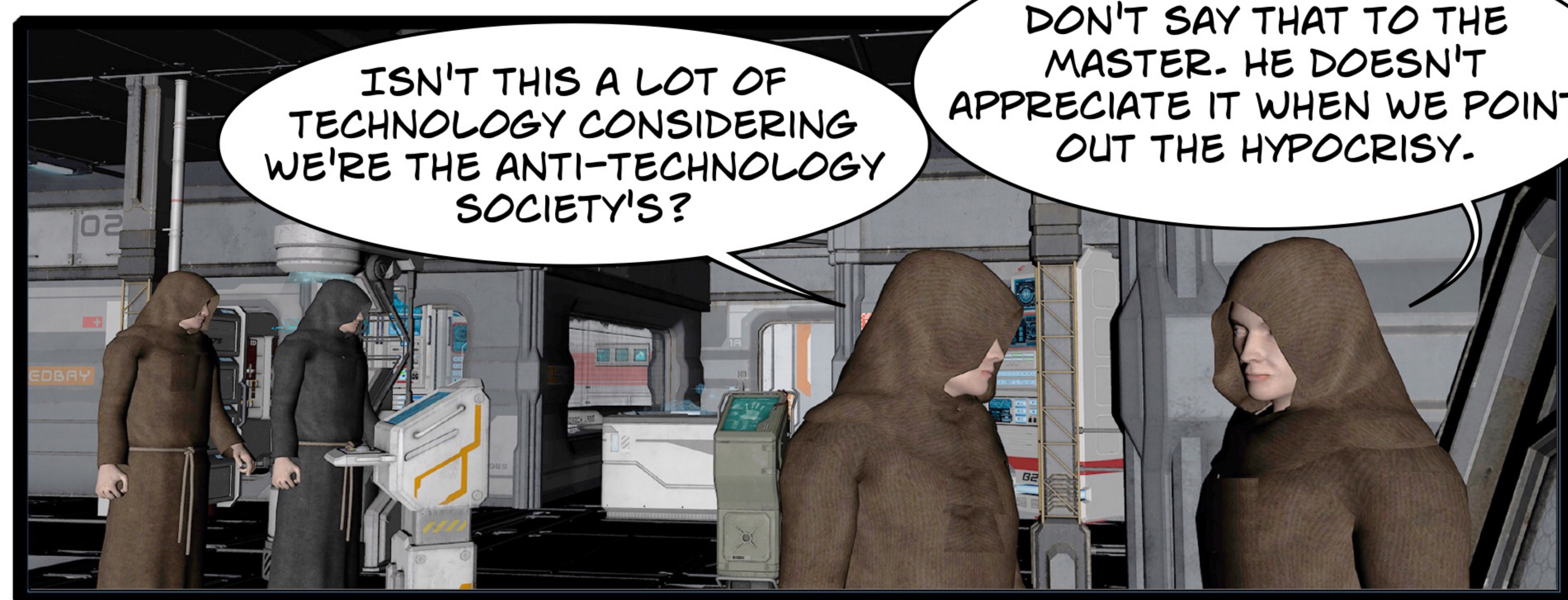
THEY HAVE A LOT OF DEDICATED RESEARCHERS WORKING VERY HARD FOR THE CENTER.

THIS IS A SETBACK, BUT NOT THE END OF OUR MISSION.



PROCEED TO THE NEXT PHASE, OUR FINAL SOLUTION.

YES, MASTER.



ISN'T THIS A LOT OF TECHNOLOGY CONSIDERING WE'RE THE ANTI-TECHNOLOGY SOCIETY'S?

DON'T SAY THAT TO THE MASTER. HE DOESN'T APPRECIATE IT WHEN WE POINT OUT THE HYPOCRISY.

DIAMONDS ARE ONE OF THE THREE QUANTUM MATERIALS WE RESEARCH HERE AT CIQM.

AND THEY HELP WITH SENDING MESSAGES?

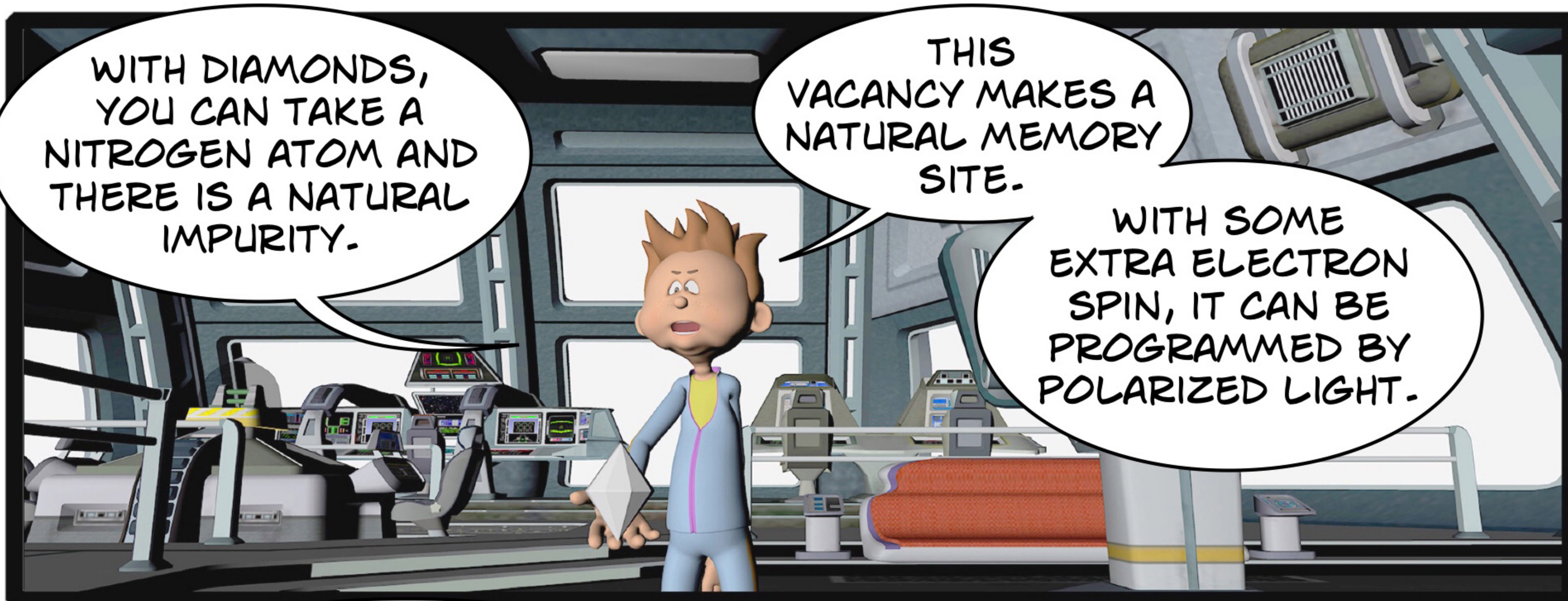
SURE!



WITH DIAMONDS, YOU CAN TAKE A NITROGEN ATOM AND THERE IS A NATURAL IMPURITY.

THIS VACANCY MAKES A NATURAL MEMORY SITE.

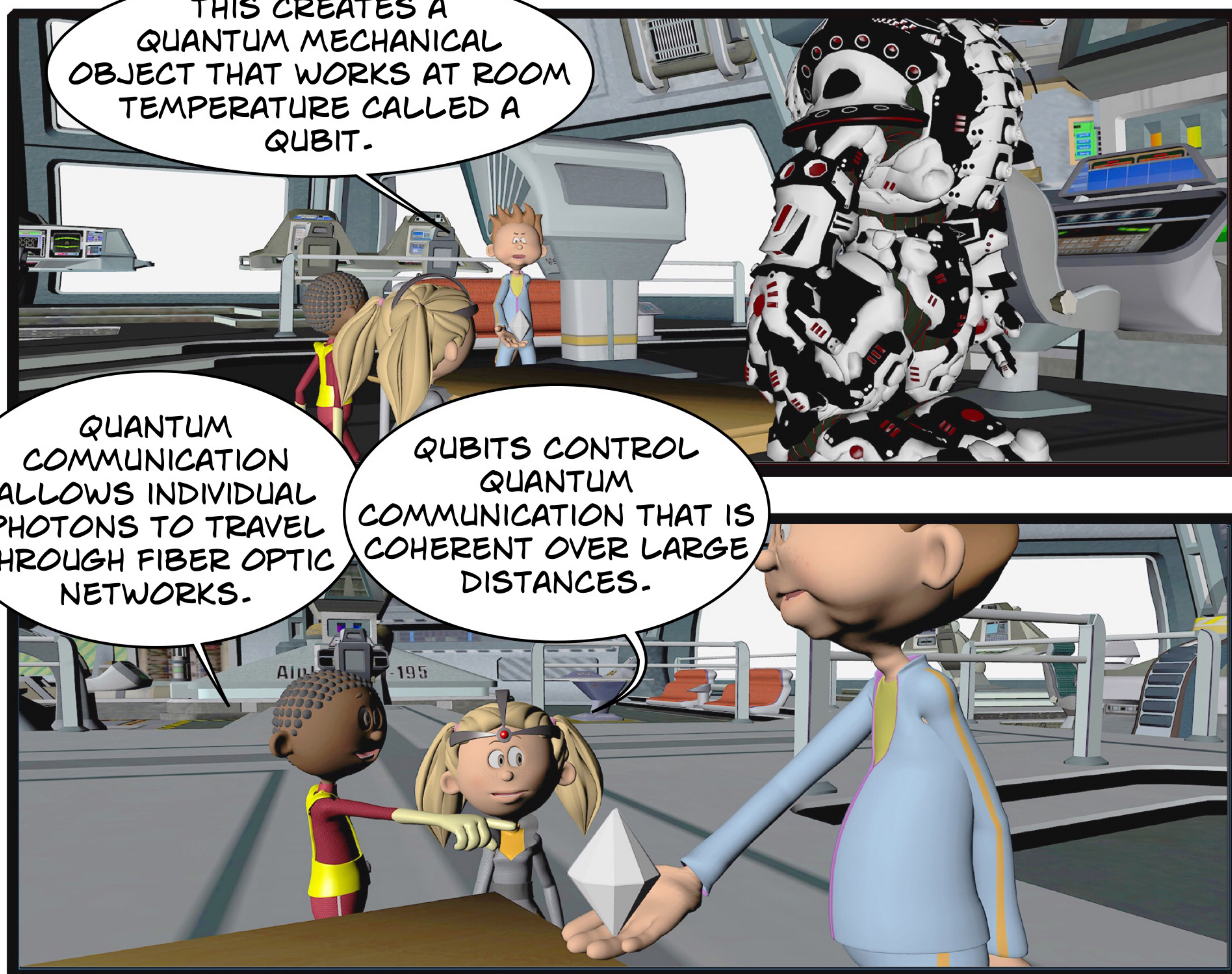
WITH SOME EXTRA ELECTRON SPIN, IT CAN BE PROGRAMMED BY POLARIZED LIGHT.

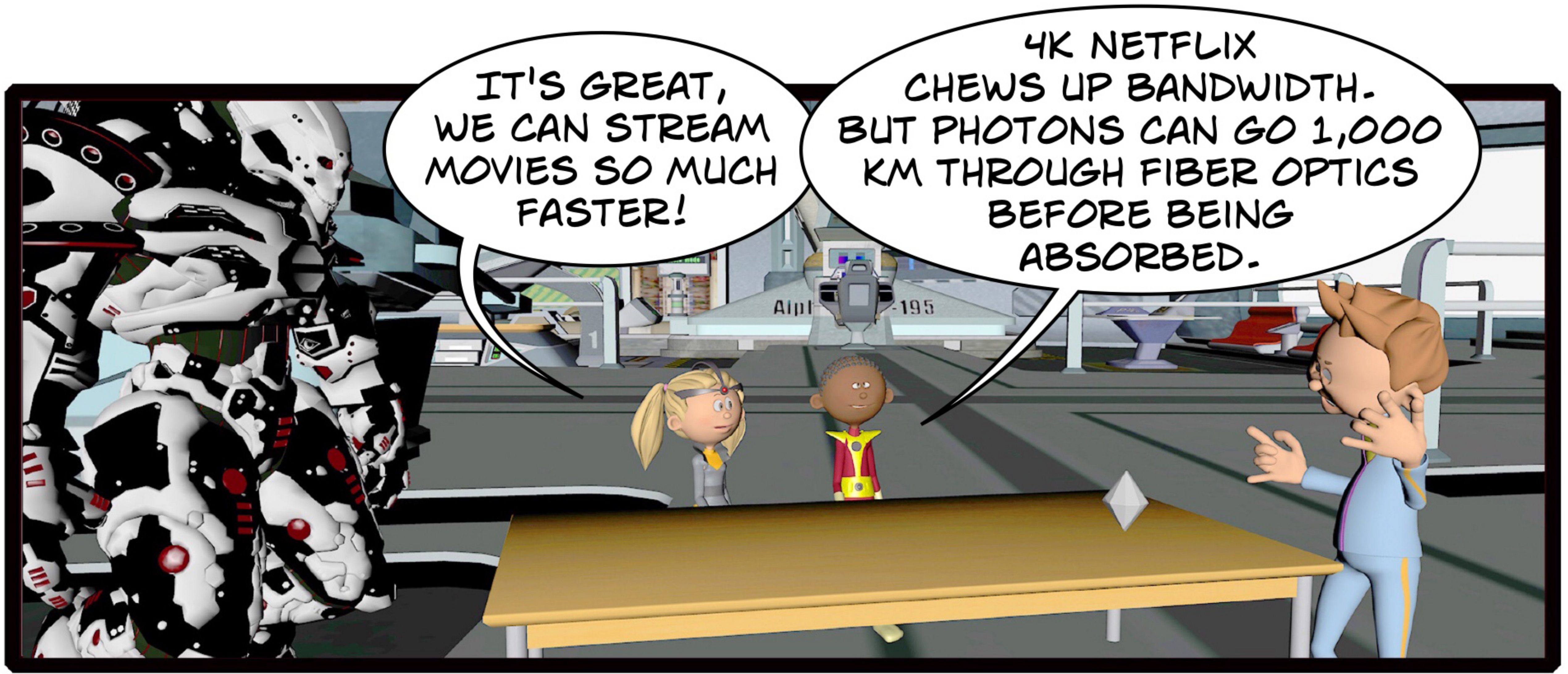


THIS CREATES A QUANTUM MECHANICAL OBJECT THAT WORKS AT ROOM TEMPERATURE CALLED A QUBIT.

QUANTUM COMMUNICATION ALLOWS INDIVIDUAL PHOTONS TO TRAVEL THROUGH FIBER OPTIC NETWORKS.

QUBITS CONTROL QUANTUM COMMUNICATION THAT IS COHERENT OVER LARGE DISTANCES.



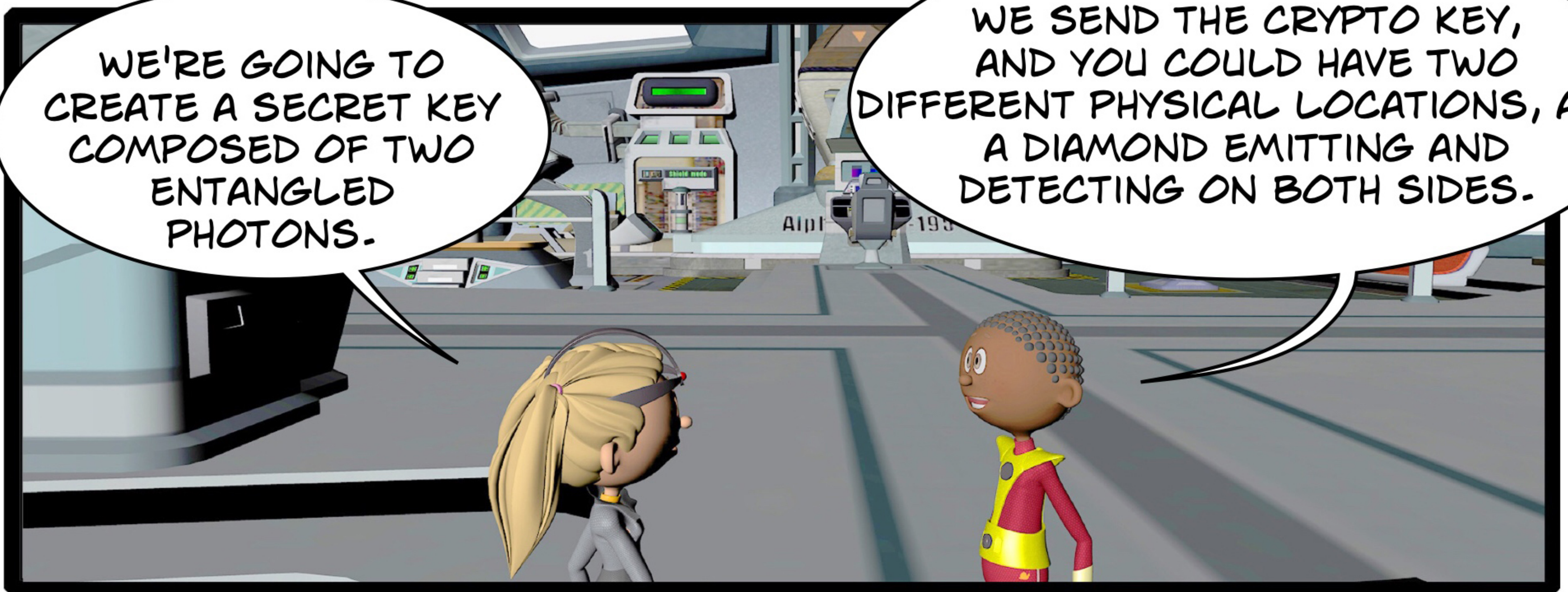


IT'S GREAT,
WE CAN STREAM
MOVIES SO MUCH
FASTER!

4K NETFLIX
CHEWS UP BANDWIDTH.
BUT PHOTONS CAN GO 1,000
KM THROUGH FIBER OPTICS
BEFORE BEING
ABSORBED.

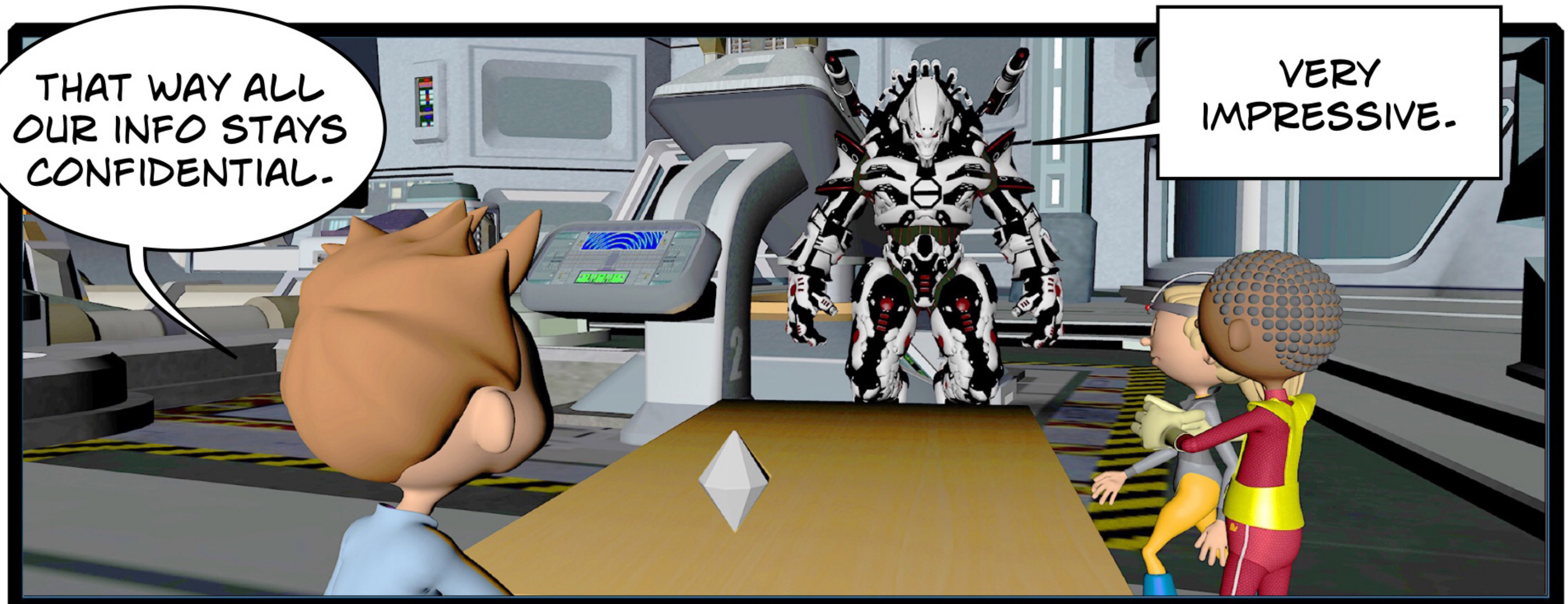


BUT CAN'T YOUR
COMMUNICATIONS
BE INTERCEPTED
AND DECODED?



WE'RE GOING TO
CREATE A SECRET KEY
COMPOSED OF TWO
ENTANGLED
PHOTONS.

WE SEND THE CRYPTO KEY,
AND YOU COULD HAVE TWO
DIFFERENT PHYSICAL LOCATIONS, AND
A DIAMOND EMITTING AND
DETECTING ON BOTH SIDES.



THAT WAY ALL
OUR INFO STAYS
CONFIDENTIAL.

VERY
IMPRESSIVE.

NOW THAT WE'VE GOTTEN THE WORD OUT, I CAN PREPARE MY TALK FOR THE TOPOLOGY CONFERENCE

TOPOLOGY CONFERENCE/ I OVERHEARD THEY PLAN TO ATTACK IT!

THAT WOULD BE TERRIBLE! PEOPLE NEED TO HEAR ABOUT TOPOLOGICAL INSULATORS!

WHAT ARE THEY?

TOPOLOGY IS THE GEOMETRICAL PROPERTY OF AN OBJECT THAT CAN'T BE CHANGED.

YOU COULD CHARGE AN OBJECT WITH A FIXED TOPOLOGY AND SEND IT DOWN A CHANNEL.

IT WOULD BE PROTECTED SO IT WOULDN'T LOSE COHERENCE.

AN ELECTRON COULD SPLIT INTO TWO PARTS. ONE PARTICLE WOULD SPIN UP, AND THE OTHER PARTICLE WOULD SPIN DOWN.

YOU WOULD KNOW WHAT HAPPENS INSTANTLY -- NO INFORMATION WOULD HAVE TO TRAVEL!

THAT CONFERENCE IS IMPORTANT. OUTREACH IS NECESSARY TO PROMOTE GOOD SCIENCE.

WE HAVE TO STOP THEIR ATTACK, AND PROTECT THE RESEARCHERS.

THEIR PROGRESS IS INVALUABLE!

GOOD THING WE LEFT THIS SPACESHIP HIDDEN IN LOW ORBIT.*

*EDITOR'S NOTE: YOU REMEMBER THAT FROM EARLIER IN THE STORY, RIGHT? NICE WORK, READER!

WE CAN CARRY OUT THE FINAL PHASE OF OUR PLAN!

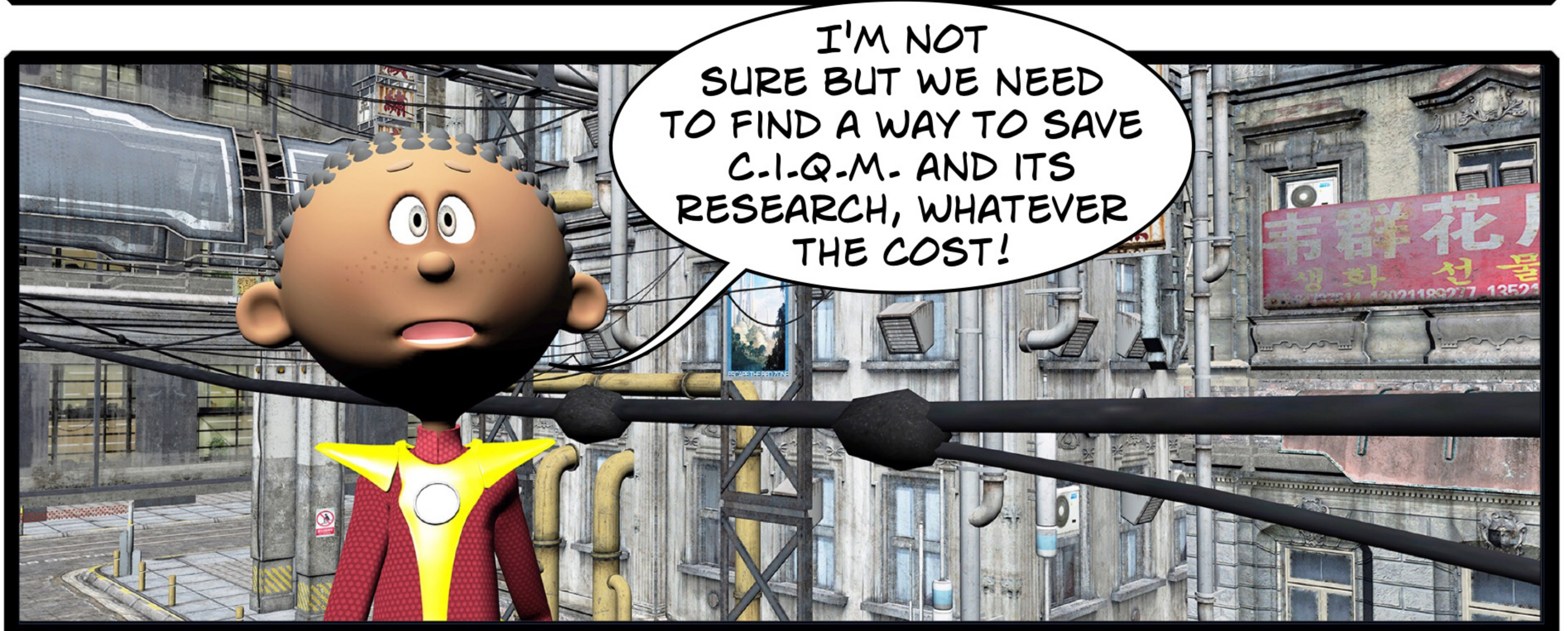
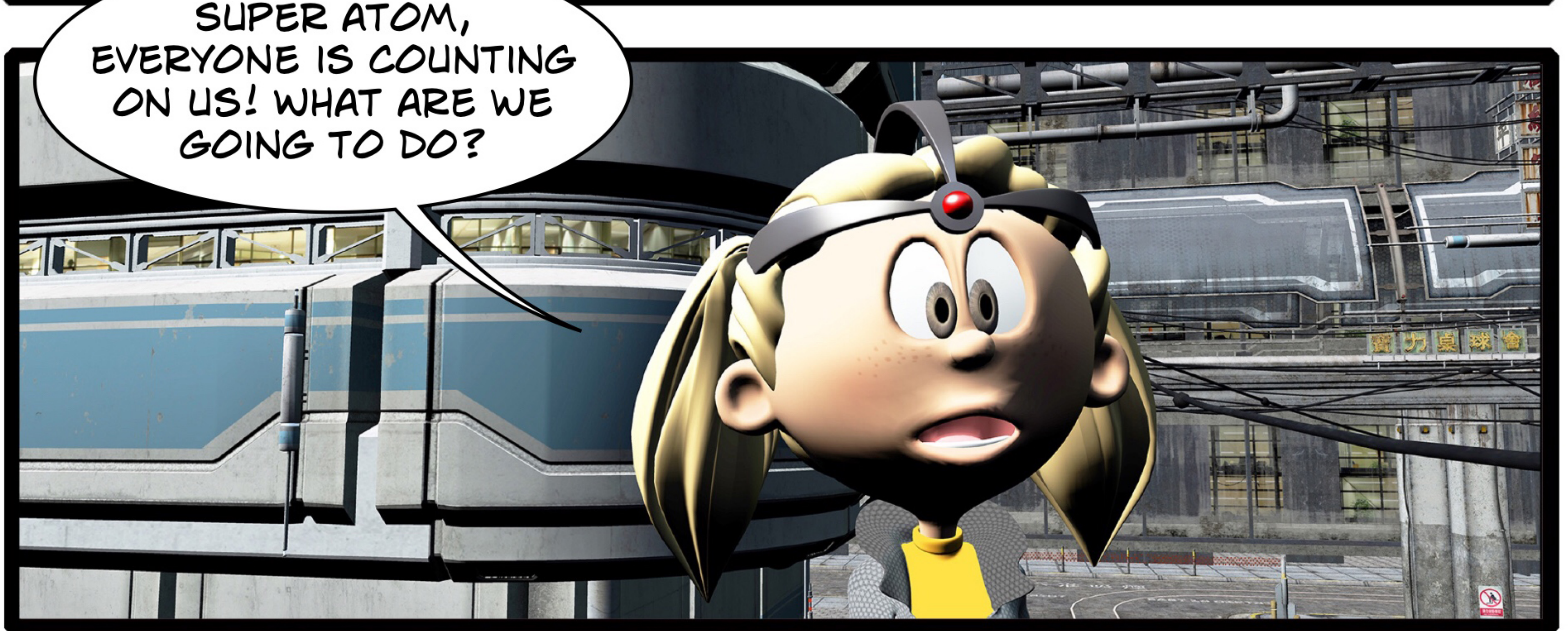
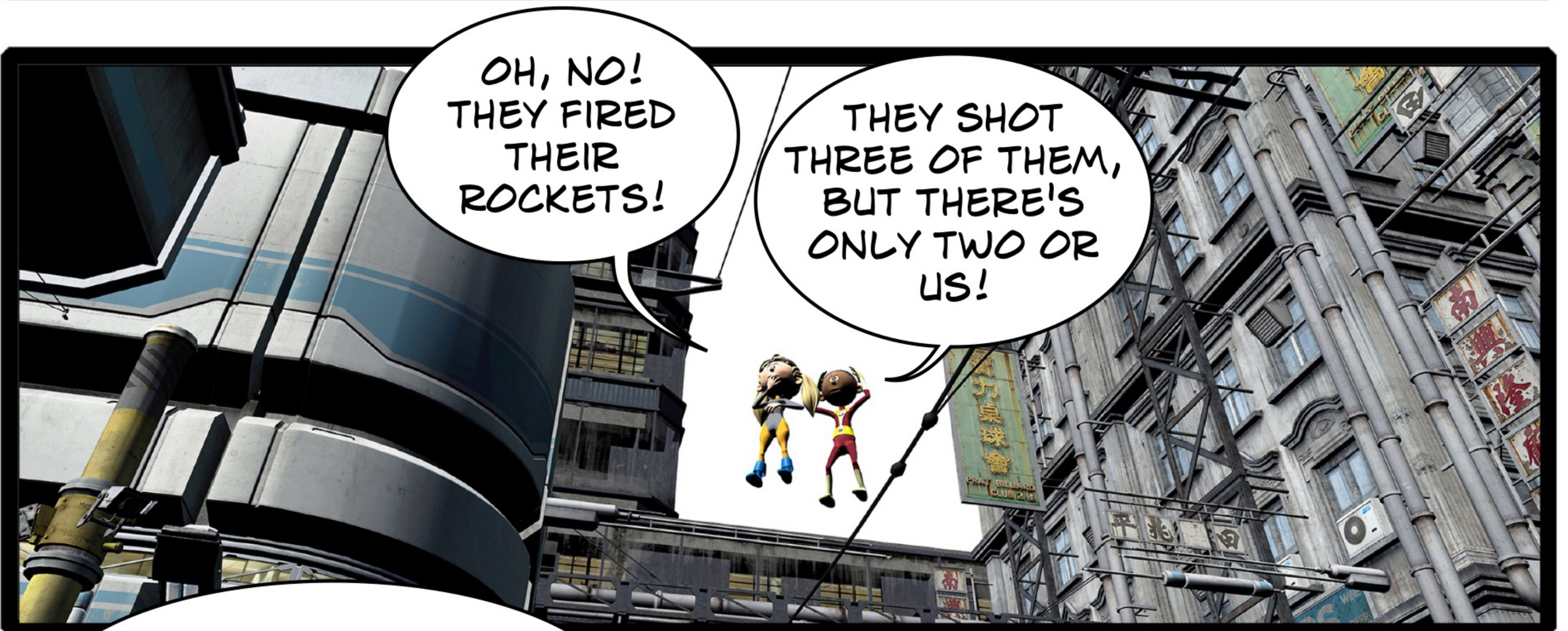
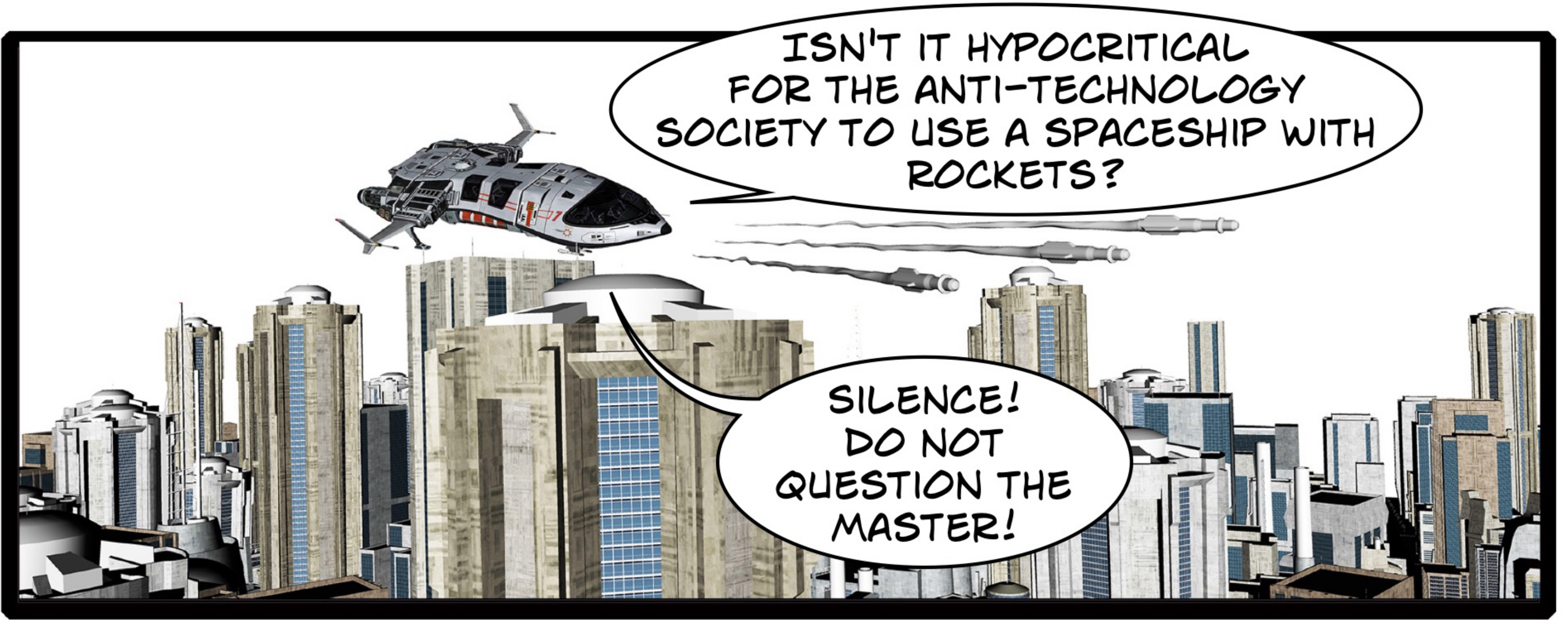
WE LIKE THE WORLD AS IT IS.

THE WORK C.I.Q.M DOES THREATENS TO CHANGE THE WORLD TOO MUCH, AND TOO QUICKLY!

QUANTUM MATERIALS ARE TOO INNOVATIVE! WE MUST PUT A STOP TO THEM!

LET'S KEEP PEOPLE IN THE DARK ABOUT C.I.Q.M. AND THEIR WORK WITH GRAPHENE, DIAMONDS, AND TOPOLOGICAL INSULATORS!

FIRE THE ROCKETS AT THE TOPOLOGY CONFERENCE CENTER!



WILL THE CENTER FOR INTEGRATED QUANTUM MATERIALS BE ABLE TO OVERCOME THE FORCES OF THE ANTI-TECHNOLOGY SOCIETY???

WILL C.I.Q.M. CONTINUE TO MAKE GREAT STRIDES AND BREAKTHROUGHS IN GRAPHENE, DIAMOND, AND TOPOLOGICAL INSULATORS, HELPING TO CHANGE THE WORLD???

WHAT HAPPENS NEXT???

STAY TUNED AND MAKE SURE TO CHECK OUT

CIQM.HARVARD.EDU

FOR ALL THE LATEST DEVELOPMENTS AND ADVANCES IN THE EXCITING FIELD OF QUANTUM MATERIALS!!!