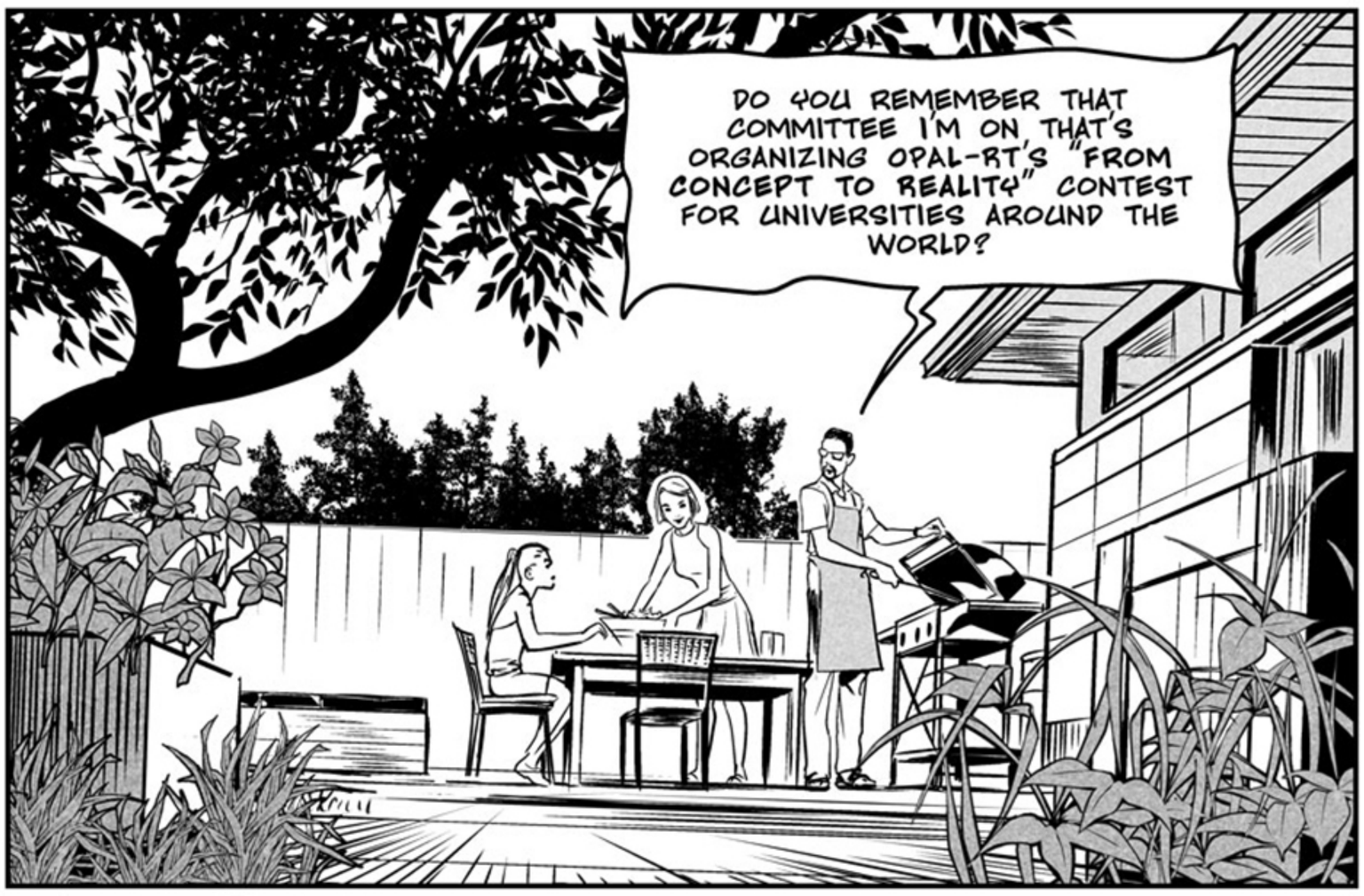
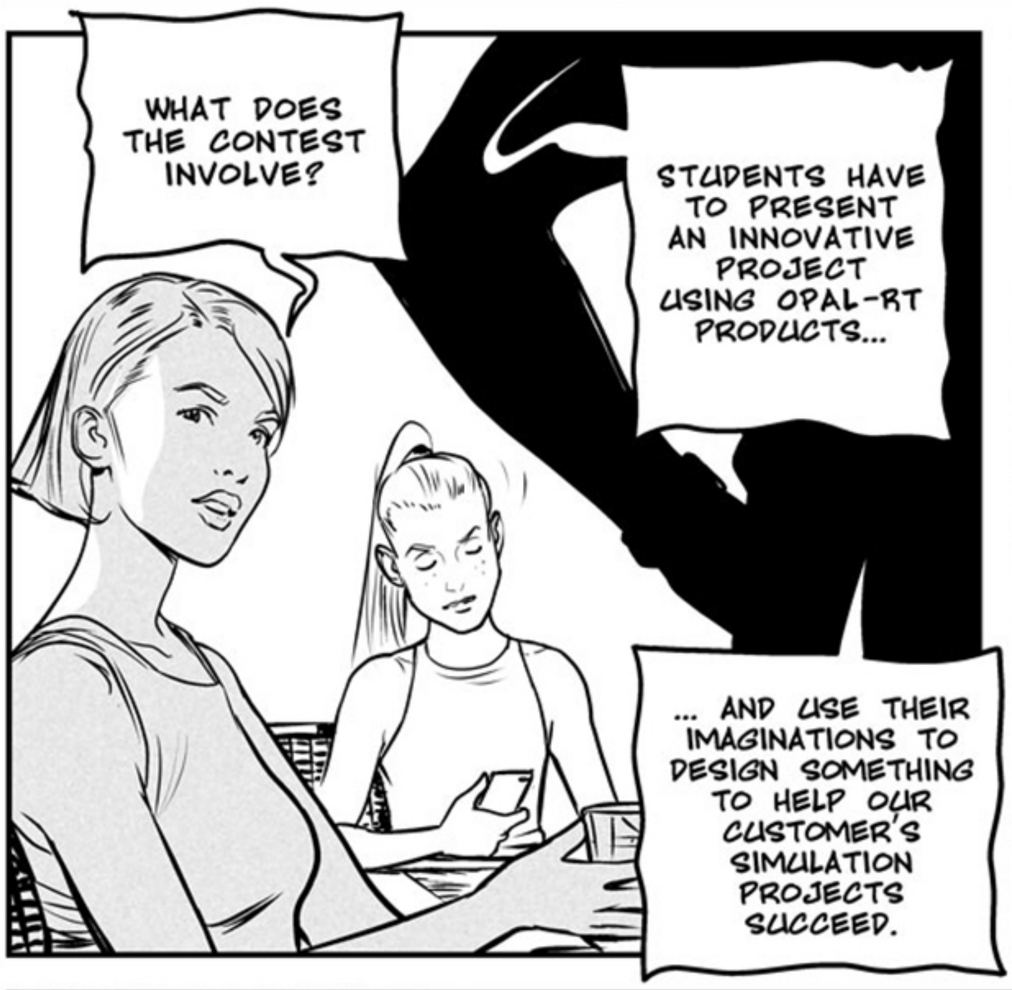
ALICE IN THE WONDERLAND OF REAL-TIME SIMULATION

ART : THIERRY LABROSSE





THREE MONTHS LATER.

DO YOU THINK YOU'D LIKE TO ENTER THE CONTEST, WITH YOUR UNIVERSITY?

IF A MONTREAL TEAM WON, IT WOULD MEAN MY DAD WOULDN'T HAVE TO LEAVE. AND IT WOULD BE GOOD FOR YOUR CAREER.

SORRY, BUT I'M ALREADY INVOLVED IN ANOTHER PROJECT. IF ONLY I HAD KNOWN SOONER.

FINE. THEN I'LL COMPETE, EVEN IF I'M NOT ALLOWED...

... NOBEL AND I WILL WEAR DISGUISES!

OKAY, LOOK., WHY DON'T WE GO SEE SOME OF THE PROJECTS. WHO KNOWS, MAYBE WE CAN HELP A MONTREAL TEAM?

GREAT IDEA!

ONLY THREE WEEKS TO GO AND ALL OF THE TEAMS LOOK READY.

THAT'S GREAT DAD.

WE WORKED SO HARD TO ORGANIZE THIS CONTEST AND I CAN'T WAIT TO SEE WHAT STUDENTS FROM ALL OVER THE WORLD HAVE CREATED.

AND I CAN'T WAIT TO SPY ON THEIR PROJECTS...

ADVANCED TRAINING FOR SELF-DRIVING VEHICLE NEURAL NETWORKS.

FROM IMAGINATION TO REAL TIME

OPAL-RT TECHNOLOGIES

THE VEHICLE'S ROUTE, THOUSANDS OF KILOMETERS, IS SIMULATED AND COLLISION RISKS ARE RECORDED.

France

HMM, WHAT IS IT, A VIDEO GAME?

?...

THE SIMULATION IS AUTOMATICALLY ADJUSTED TO TRAVEL A DISTANCE THAT WOULD TAKE AN ACTUAL VEHICLE MONTHS TO TRAVEL.

WE CAN EVEN INJECT SIMULATED ANIMAL ENCOUNTERS AND ASSESS WHETHER THE VEHICLE MAKES THE RIGHT DECISIONS.

France

OPAL-RT'S OP5600 RECORDS ALL POSSIBLE COLLISION PARAMETERS AND THE ON-BOARD COMPUTER USES THAT DATA TO CALCULATE THE CORRECT ACTIONS TO TAKE DURING FUTURE SIMULATIONS AND ROAD TESTS.

SIMULATION ALLOWS US TO DESIGN SELF-DRIVING VEHICLES THAT ARE MORE AND MORE INTELLIGENT, IN A FRACTION OF THE TIME IT WOULD TAKE IF WE USED ROAD TESTS ALONE.

BY COMBINING SIMULATION RESULTS WITH ROAD TEST RESULTS, WE CAN CREATE SELF-DRIVING VEHICLES AND REVOLUTIONIZE TRANSPORTATION!

THAT IS SO COOL!

BRAZIL - CANE SUGAR PRODUCTION OPTIMIZED IN REAL-TIME

DO YOU THINK THEY COULD WIN?

IMAGINE USING SIMULATORS TO CONTROL SENSORS IN THE SOIL, AND LINK TO THE STOCK MARKET TO MANAGE CANE SUGAR SUPPLY AND DEMAND?!

IT IS A CREATIVE IDEA...

DO YOU THINK THEIR PROJECT COULD BE ADAPTED FOR QUEBEC? WE COULD CONVINCE MY DAD TO HOST THE PROJECT HERE INSTEAD OF IN BRAZIL.

WE GROW SUGAR CANE IN QUEBEC?

NO, I DON'T THINK SO.

"...YOUR SIMULATORS ARE VERY POWERFUL FOR..."

"...VERY INTERESTING..."

"...IMAGINE SIMULATING IN REAL-TIME.."

"...AND THE LINK BETWEEN ALL OF..."

"FOR SURE"

"...AN IDEA THAT CAN BE USED IN OTHER COUNTRIES"

YOU HEARD THEM; IT CAN BE USED IN OTHER COUNTRIES. IT MIGHT BE OUR ONLY CHANCE TO KEEP THE PROJECT HERE. WE HAVE TO FIND A WAY TO HELP THEM AND MAKE SURE THAT MY DAD STAYS HERE.

I KNOW ...LET ME SHOW YOU SOMETHING.

THIS IS WHERE THEY CONNECT ALL THE SIMULATORS FOR THE CONTEST

IF I CAN FIGURE OUT WHICH ONE IS ASSIGNED TO BRAZIL...

...WE MIGHT BE ABLE TO GIVE THEM AN EDGE.

GREAT IDEA SIMON! YOU'RE THE BEST! I'M JUST GOING TO CHECK OUT THE OTHER PROJECTS.

OKAY. LET'S MEET IN THE CAFETERIA IN TWO HOURS.

...ARE ADVOCATING TWO MEANS OF EXPANDING SOUTH AFRICA'S EXISTING POWER GRID.

ONE EXAMPLE, WHICH IS WHAT MANY OTHER COUNTRIES ARE DOING, IS SEVERAL DISTRIBUTED GRIDS, AND NUMEROUS INDEPENDENT MICRO-GRIDS WITH SOLAR PANELS.

SOUTH AFRICA

AND WHAT DOES YOUR PROJECT AIM TO DO?

USING THIS SIMULATOR, WE HOPE THAT WE CAN CREATE A MODEL THAT COMBINES BOTH A DISTRIBUTED GRID AND A MICRO-GRID.

THE CHALLENGE IS MAINTAINING GRID STABILITY AND LIMITING THE NUMBER OF LARGE POWER LINES TO CUT COSTS.

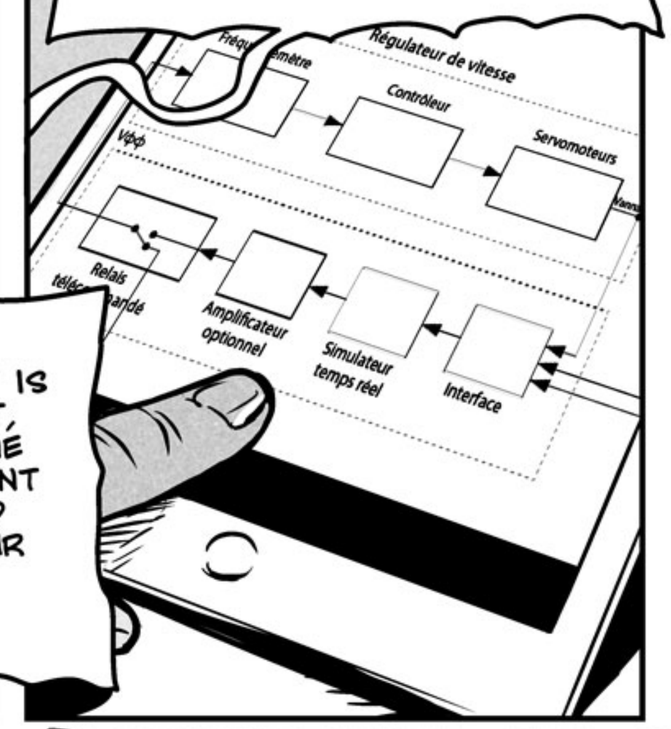
I HAVE HEARD THAT POWER DISTRIBUTION LINES CAN BE COSTLY, AND NOT SO ECO-FRIENDLY.

IT'S INTERESTING, BUT HOW CAN YOU GUARANTEE THAT THE MODEL WILL WORK.

WE'LL BE USING OPAL-RT PRODUCTS SPECIFICALLY DESIGNED TO GUARANTEE MODEL RELIABILITY.

YES, THAT IS IMPORTANT, OR NO ONE WOULD WANT TO BUILD ONTO YOUR GRID.

BERTA WILL ALLOW US TO CAPTURE ACTUAL GRID MEASUREMENTS TO IMPROVE OUR DATA MODEL.



AND EPHASORSIM WILL ALLOW US TO GUARANTEE GRID STABILITY.

YOU MEAN THAT YOU WILL ELIMINATE POWER FAILURES?!

ESSENTIALLY. THAT'S WHAT WE'RE HOPING TO ACHIEVE FOR SOUTH AFRICA.

SO, WHY NOT MAKE A MODEL FOR ALL OF AFRICA AND NOT JUST SOUTH AFRICA?

WE CONSIDERED IT, BUT IT WOULD REQUIRE MORE COMPUTATIONAL POWER THAN WE HAVE.

LET'S SAY A SIMULATOR HAS 3 BRAINS. IF WE WANTED TO SIMULATE ALL OF AFRICA, WE WOULD NEED AT LEAST 10 BRAINS.

ALSO, ALL THE COUNTRIES IN AFRICA WOULD HAVE TO AGREE ON OUR MODEL.

SO WHY THIS PROJECT?

ONLY ABOUT 30% OF SOUTH AFRICANS HAVE ELECTRICITY. OUR DREAM IS FOR EVERYONE TO HAVE ACCESS TO ELECTRICITY, FOR STUDENTS TO BE ABLE TO TURN ON LIGHTS TO STUDY AT NIGHT.

WOW, THAT SURE IS A GOOD CAUSE! GOOD LUCK TO YOU!

SO? DID YOU LOOK AT THE PROJECT

I DID AND THERE WERE SO MANY INTERESTING POINTS! AND WHAT ABOUT THAT PROJECT FROM FRANCE?!

OH, AND SOUTH AFRICA! THEY WANTS TO PROVIDE ALL CHILDREN ACCESS TO ELECTRICITY?! I MEAN, WHAT A GREAT CAUSE! IT MAKES ME FEEL SILLY FOR FEELING SORRY FOR MYSELF BECAUSE I WON'T SEE MY DAD ALL SUMMER. I SURE HOPE THE SOUTH AFRICAN PROJECT WINS.

ME TOO.

YOU KNOW, WE COULD CONNECT ALL THE SIMULATORS TOGETHER TO PROVIDE ALL THE PROCESSING POWER THEY NEED FOR THEIR PROJECT...

BUT THAT WOULDN'T BE FAIR; WE WOULD HAVE TO MAKE IT AVAILABLE FOR EVERYONE.

LET'S DO IT!

AND WE CAN STILL HOPE SOUTH AFRICA WINS.

DAD WOULD STILL BE GONE THE WHOLE SUMMER, BUT IT'D BE FOR A GOOD CAUSE.

BEFORE WE BEGIN, I WOULD LIKE TO THANK EACH AND EVERY PARTICIPANT FOR THEIR HARD WORK AND INNOVATION. YOU HAVE SUCCEEDED IN TRANSFORMING YOUR IMAGINING INTO REAL-TIME.

THE WINNING PROJECT WILL BE FINANCED BY OPAL-RT HAVE THE FULL SUPPORT OF AN ENTIRE OPAL-RT TECHNICAL TEAM.

WHAT WE HAVE SEEN HERE MAKES US PROUD OF THE NEXT GENERATION OF ENGINEERS.

I AM PLEASED TO ANNOUNCE THAT THE WINNER OF OPAL-RT'S "FROM IMAGINATION TO REAL-TIME" CONTEST IS SOUTH AFRICA, WITH THEIR "MULTI-SCALE GRID" PROJECT!

THEY SUCCEEDED IN CREATING A MODEL THAT COMBINES A DISTRIBUTED GRID AND A MICRO-GRID FOR ALL OF SOUTH AFRICA. WHAT AN IMPRESSIVE FEAT!

?

BRAVO, BRAVO !!!

OPAL-RT TECHNOLOGIES

DATE 01 JANVIER 2019

20 000,00

"Réseau Multi-échelles"

Vingt-mille

BRAVO !

STRANGE. THEIR DEMONSTRATION WAS WAY BEYOND ONE SINGLE SIMULATOR'S CAPACITY. THEY WOULD HAVE NEEDED AT LEAST 10 SIMULATORS TO PULL THIS OFF.

REALLY? YOU MEAN IT'S POSSIBLE TO CONNECT SIMULATORS TOGETHER?

OF COURSE IT IS! BUT I DON'T SEE HOW THEY COULD HAVE DONE IT WITHOUT ACCESS TO THE SERVER ROOM...

RELAX KIDS. I KNEW WHAT YOU DID AND I WANTED TO SEE YOU PANIC. THANKFULLY, EVERYONE HAD ACCESS, SO IT DIDN'T AFFECT POINT SCORES.

ALICE? HAVEN'T YOU PACKED YET?

?

WHAT?!

YOU AND YOUR MOM ARE COMING WITH ME, OF COURSE. TWO MONTHS IN SOUTH AFRICA! MAYBE YOU COULD EVEN LEND ME A HAND?

YAY FOR NEW ADVENTURES!

AGAIN, I CAN'T THANK YOU ENOUGH FOR COMING.

THANKS TO SIMULATION, WE'RE SAVING ON INSTALLATION COSTS AND NEED FEWER LINES FOR THE GRID.

AND IT'S ECOLOGICALLY AND ECONOMICALLY SOUND, TOO!

THE END