

Chairman's Award - Team 3646

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2017 - Team 3646

Team Number

3646

Team Name, Corporate/University Sponsors

Bahcesehir University/Besantas Beton/Atom Karınca/Filli Boya/Honda/Ekinciler Holding/Basaksehir Municipality/Volsa Gida/Delta/Boyut Engineering/Erenler Kablo/Alkilic Foundation/Solidworks/Borusan Holding&Bahcesehir High School for Science and Technology

Briefly describe the impact of the *FIRST* program on team participants with special emphasis on the 2016/2017 year and the preceding two to five years

FIRST encouraged our members to choose STEM related majors in a country where science and engineering are not celebrated. We have 19 patent applications 6 of which have been confirmed. 3 of our members have been offered internships at an animation company after their success in creating a safety animation. 90% of our school presidents are members of INTEGRA. Our members gained a total scholarship of \$5,500,000 from top colleges: MIT, Stanford, Yale, Brown, Northwestern etc. for STEM majors.

Describe the impact of the *FIRST* program on your community with special emphasis on the 2016/2017 year and the preceding two to five years

With Bahcesehir Schools,we prepared a STEM oriented curriculum incl FIRST,it's used in 45 primary schools.We made a new curriculum for all Science High Schools in Turkey was accepted by Ministry of National Education,we reached +30,000,000 students.Our mechanical abilities shaped many projects incl ones about shore security used by Turkish Armed Forces,preventing terrorism by detecting bombs&saving refugees' lives on the sea.We put up stands at Innovation Week, Maker Fairs&BrandWeek Istanbul.

Team's innovative or creative method to spread the *FIRST* message

Our Science Truck,with 20 experiments on scientific laws,STEM&FIRST; traveled 7,000 mi. across Turkey&reached +50,000 people. We helped form 10 Science Museums across Turkey, designed&built their stations. Cooperating with Max Planck Institute, we organized the Science Tunnel&presented STEM&FIRST to +70,000people. Cooperating with the navy,we held the first STEAM Biennial in the world. We established "Girls First" which motivates girls to participate in STEM and FIRST reaching out to 26 schools.

Describe examples of how your team members act as role models and inspire other *FIRST* team members to emulate

We're the delegates of Turkey at FIRST Robotics World, a net between global teams. We created& published integratedfirst.com to function as a bridge between all teams & form the 1st CV database of FIRST members. We give many presentations about FRC and inspired students to start teams. We give lectures & educate FRC teams at every Kick-Off, which we held & found battery sponsorship and nationwide media coverage. We shared our business plan with rookie teams. We volunteer at Jr.FLL, FLL and FRC.

Describe the team's initiatives to help start or form other FRC teams

We started teams 6038,6232,5773,5946,5558,6025,8002,8015,8016,6409 by finding sponsorship,introducing FIRST &providing mentorship. We provide mentorship to 6025.We held&volunteered at Turkish OffSeason. At every national FLL tournament, we inform FLL teams about FRC and how they can start a team by giving speeches.Many teams found out about FRC with these speeches. We exchange contact info&help them in their journey to become an FRC team. We held FRC seminars for the top high schools in Turkey.

Describe the team's initiatives to help start or form other *FIRST* teams (including Jr.FLL, FLL, & FTC)

We organized a program and trained 45 new FLL mentors. With the help of this program, we started 52 FLL teams in different cities of Turkey. We're actively mentoring 29 FLL teams? 23 via internet & 6 in person. We started an FLL team in the first Living Lab of Turkey, which we helped build. We started Jr.FLL in Turkey; organized, held, volunteered at its fairs. Our goal is to increase these numbers & start FTC in Turkey. We organized an FLL Off Season in cooperation with Bahcesehir University.

Describe the team's initiatives on assisting other *FIRST* teams (including Jr.FLL, FLL, FTC, & FRC) with progressing through the *FIRST* program

We created frcdonationfirst.com to assist teams needing parts & translated Game Manuals & videos; held Kickoff, equipped & managed Spare Parts & provided sponsors for Batteries & Media Coverage for Off-Season; made presentations to Intel, HP and Microsoft to provide sponsorship for Turkish FIRST teams; joined 7/24 FRC Call Center -

a Q&A system. We arranged sponsorship for 70 new FLL teams to be provided by 30 Turkish Municipalities coordinately with 4 FLL teams. We are mentoring 8 Jr. FLL teams.

Describe how your team works with other *FIRST* teams to serve as mentors to younger or less experienced *FIRST* teams (includes Jr.FLL, FLL, FTC, & FRC teams)

Collaborating with teams 2905 & 4191, we organized Kick-Off events in the last 3 years during which we held workshops. We produced an open-source printed FLL Project Archive in collaboration with the national organizer of FLL. We donated 15 Mindstorms Kits to state schools. With team 4, we contributed to the efforts to form a team in Mongolia. We mentored 4 teams in their first games, Turkish Off-Season. We provide mentorship to 10 FRC teams from the capital to small cities of eastern Turkey.

Describe your Corporate/University Sponsors

The sponsorship of Bahcesehir University provides the greatest support, together with Bahcesehir Schools. They have covered the costs of plane tickets since INTEGRA was formed. Besantas and Ekinciler Holding provided sponsorship for the accommodation. Delta Construction, Erenler Cable, Boyut Engineering helped with the manufacturing of parts. Volsa Food sponsored team apparel. Alkilic Foundation covered the entrance fee.

Describe the strength of your partnership with your sponsors with special emphasis on the 2016/2017 year and the preceding two to five years

Sponsors are our sincere partners and part of the INTEGRA Family. We visit & invite them at regular intervals, keep in touch by sending emails. We give them plaques, team tshirts, and gifts that we design and build. In addition, we gave RC plane tutorials to Bahcesehir University Mechatronics Club students and Basaksehir Municipality. We also provide value for our sponsors? for example, we prepared an animated commercial for our sponsor, City Tourism. Our alumni study at Bahcesehir University.

Describe how your team would explain what *FIRST* is to someone who has never heard of it

When youth discovers their talents and passions, take up the courage to fulfil their dreams, a new path leading to the future appears. Following the same road, they end up in the same spot as others just like them & they discover the excitement of STEM. Their mission is to form a team, become a solution based thinker & build a robot to reach the skies. Near the end, the airship takes, carrying the curious youth to everywhere in the world & led by Captain Dean Kamen, they spread knowledge to all; simply *FIRST*.

Briefly describe other matters of interest to the *FIRST* judges, if any

We are boarding students from all over Turkey. Holidays are our only opportunities to spend time with our family? yet we choose to stay at school, sleeping in the library on beanbags. We internalize the joy of producing our own designs on which we spend countless hours. Our country's education system is based on tests and the extra time we spend on FRC create the risk of us not getting into the university we want in Turkey. However, the real life skills gained through FRC are worth it.

Team Captain/Student Representative that has double-checked this submission.

Hakan Balik

Essay

This morning, the lab is filled with more people than ever before. Making of the situation is quite difficult for anyone as INTEGRA has never been this crowded before. I, on the other hand, have been here for the last 6 years. I know what's going on and what has happened just as well as the team members themselves. Who am I? I'm HOPE, INTEGRA's first robot built by only 5 BHSSciTech students when the team was first founded. They have always kept me close, giving me the chance to observe all of their projects which not only advanced but also spread science, STEM and the *FIRST* spirit. It was inevitable for INTEGRA, whose all members had attended FLL, to impact its community in profound ways as a result of passion, determination and outstanding grip of the *FIRST* message.

Back to the reason for the crowd... 3646, who coorganized and participated in the 1st FRC Turkish Off-Season last year, chose a different path to support the tournament this year: the whole team will volunteer. They're also building the steampunk-themed mascot of the tournament, the 1st robot with a generator, FIKRET so as to inspire teams.

Furthermore, 3646 has founded and mentored 10 FRC teams. See that's the reason! In addition to mentoring 6 of these teams via the Internet, INTEGRA has invited teams 8016, 8015, 6409, 8002 to our school. What makes this crowd special is that they've all come from schools all around Turkey. They were members of FLL teams founded in Bursa, Edirne and Diyarbakir last year, with the help of INTEGRA's efforts. Members of 3646 going to Diyarbakir 2 years ago, a place shattered by terrorism, in order to mentor FLL teams is still vivid in my mind, as if it was just yesterday. It makes me indescribably proud to see those little FLL members grow up and work to carry their countries one step further.

While I was lost in thoughts, I overheard Mustafa from Diyarbakir talking to his teammates: "I first encountered INTEGRA's name when they established the science museum in our school." Ali replied: "Did you know that they established it at 10 schools including ours, and delivered the *FIRST* spirit to a total of 10,000 students?"

Aside from that, INTEGRA reached 50,000 people, introducing them to STEM, *FIRST* and the scientific laws by traveling to over 15 cities with the "Mobile Science Museum", or as the team called it, the "Science Truck".

Their tremendous effect on spreading *FIRST* and its values to their country results from the members' praising perspective regarding FLL. The team has formed 52 FLL teams and is mentoring 29 of them, 23 via the Internet. 3646

makes presentations on the importance of FRC to 45 FLL teams and volunteers at the tournaments every year, encouraging them to form FRC teams. They help these teams by donating parts during the FRC process, inviting them to their school and instructing them on the basics of PR, Gracious Professionalism, mechatronics and electronics. What's more, they translate the game manual and related videos into Turkish, so that those who aren't proficient in English can feel confident at all stages of the tournament. To help these teams, they also became the delegates of Turkey at FIRST Robotics World, a net established between global teams founded by 5526.

A phone ring suddenly filled the room as the excitement and preparations were still going on at full speed. The call could be from anywhere around the world; after all, INTEGRA was the Turkish representative of 7/24 Call Center, which team 3132 established to help FRC teams this year. During this talk, one of INTEGRA's members Ceren, guided the calling team to frcdonationfirst.com, a website set up and established by INTEGRA to assist teams in need of parts.

3646 hosted FRC Kickoff last year, during which they gave lectures on "Creating a 3D Animation", "Mechanical Design" and "Gracious Professionalism". They also equipped and managed the spare parts besides finding sponsors for batteries and nationwide media coverage.

Kemal from Bursa's FRC team was looking curiously at the CNC machines and 3D printers, trying to figure out its usage. Ceren explained: "We design cat, bird and dollhouses using AutoCAD, and manufacture them using the CNC machines. Then we donate the animal houses to municipalities and the dollhouses to orphanages. We use 3D printers to build our prototype robots but they have one more purpose for us, a very special one. We actively take place in the social responsibility project Robotel, producing economic and adaptable robot hands with personal measures and qualifications on our 3D printers to those in need of prosthesis or suffering from ABS (Amniotic Band Syndrome). By doing so, we wish to make their lives easier to the best of our ability." Fascinated from what he heard, Kemal realized in that moment that FRC was much more than just creating robots, he understood why FRC also meant "Focusing on Renovating the Community" for INTEGRA.

Another member of INTEGRA, Berkin noticed that he remembered many of these FRC teams' members from before. This was thanks to the Young Diplomats Conference, INTEGRA has been held for the last 2 years with students they invite from different schools. At this event, thousands of high-schoolers discuss current global issues with the aim of helping teenagers gain self-confidence so that they can speak up for a better world.

In order to increase girls' participation to STEM and robotics, and encourage them in their journey towards engineering, 3646 organized the "Girls First" seminar, reaching female students from 26 schools. In addition, they held an innovation camp with 80 students from different schools. In this way, INTEGRA introduced high school students to the spirit of creation.

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The team has just returned from their meeting with the Ministry of National Education. INTEGRA had decided that the best way to affect a community was to affect the young population. Young ones are those who learn life and will become the future. This led them to develop an innovative and technological curriculum that attaches the utmost importance to STEM and robotics with FIRST in the 1st place. The curriculum covered subjects like bionanotechnology, coding, and science history. 3646's starting point was this meeting. As a result of this meeting, it had been decided that INTEGRA's curriculum would be put into action in all science high schools of Turkey, pioneer robotics classes and inform the teachers accordingly. Thus, INTEGRA will affect 30,000,000 students' lives and introduce every single one of them to STEM and FIRST. This will be the greatest step the team has ever taken towards the goal of building a bright future for humankind.

3646 is the volunteer lecture interpreter at Khan Academy. They initiated "Introduction to Robotics" course and became the first high schoolers to give lectures in this leading online platform.

It was about time for the video call they conduct with the Turkish academician from MIT and INTEGRA's honorary member Canan Dagdeviren. In these regular calls they carry out, members explain their projects, and derive strength and HOPE upon seeing Ms. Canan, whom they see as a role model, support themselves. Ceren: "Our members have 19 patent applications 6 of which are confirmed. This is a result of academic capacity and creativity fueled by involvement in FIRST. An example of FIRST assisting our academic studies is a project for utilizing model airplanes to provide the security of the shores, which is currently being used by the Turkish Armed Forces. Another project that we've developed aims to save the refugees' lives on the sea and we're holding meetings with Turkish Naval Forces Command so that it may be put into use. Now we're developing some other projects aimed at preventing terror by detecting the bomb before the attack."

Engineering is related to the community and people as much as it is to machines. The principle that engineering is tied closely with every aspect of daily life from political systems to city transportation is the CORE (Code of Real Engineering) of 3646. The things they do always make me and the entire country very proud. The majority being boarding students since the beginning, INTEGRA works with self-devotion, come rain or shine. They believe they can build a better future for everyone, so they mostly go to bed with the sun, on their beanbags rather than go home, and they're continuing to make this come true step by step. Surely there are times when they have to face challenges, and new strategies are a must. That's where ICoS comes into play. ICoS (INTEGRA Code of Solution) was developed by the team both as a method to overcome challenges faced by INTEGRA and as a guide to the newly-founded Turkish FRC Teams.

The first users of these beanbags, 3646's former members came to my mind. They're now studying at STEM related majors at the world's top universities such as MIT, Stanford and Brown with scholarships worth more than \$ 5,500,000. The clock is ticking for Off-Season. I'd expect INTEGRA, who has founded and prepared this many teams, to be bursting with happiness, but sadly some of the teams won't be able to attend the season tournaments in the US due to financial issues. INTEGRA aims to solve this problem with the website they created, integratedfirst.com, which will be the 1st CV database of those participating in FIRST and grow into a communication network between teams from all over the world. Also, teams will be able to introduce themselves far and wide with potential sponsors taking active roles in the website.

INTEGRA, who holds high goals for the scientific world and STEM culture as well as great desire and determination, is continuing to build the future while giving us HOPE: Helping Others to Promote Engineering. On this tough road that reaches out to infinity, they're taking major steps forward with their everlasting FIRST spirit and resolution. I was their HOPE in the beginning, now they're the HOPE of the future.