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Bu proje Avrupa Birliği ve Türkiye Cumhuriyeti tarafından finanse edilmektedir

International Study Visit, Germany 27-31 Jan 2020

ZORLU

VESTEL Electronics

VESTEL

Dr. Metin Nil

metin.nil@vestel.com.tr

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Description of the Organization

International Study Visits of TARAL to EU Key Players

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Description of the Organization

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At a Glance Vestel Electronics

INPUTS

16.000 + EMPLOYEES

10 R&D CENTERS

1600+ R&D EMPLOYEES

% 4 EXPENDITURE ON R&D

40+ PhD R&D

OUTPUTS

ONE OF WORLDWIDE TOP TEN TV MANUFACTURES

ONE OF EUROPE TOP FIVE WHITE GOODS MANUFACTURES

ELECTRONICS LEADER FOR 21 YEARS

500+/YEAR R&D PROJECTS

%13 OF TURKEY PATENT APP. IN 2017 FIRST 50 IN EPO

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Consumer Electronics

TOSHIBA
HITACHI
JVC
PHILIPS
TELEFUNKEN
Panasonic
Haier
TEAC

TESCO
expert
Carrefour
DARTY
JOHN LEWIS & PARTNERS
Conforama
E.Leclerc
RTV EURO AGD
EP: ElectronicPartner
LIDL
MEDION
MediaMarkt
EURONICS
fnac
real.
El Corte Inglés
Auchan
METRO
Dixons
Argos
Harvey Norman
TechniSat
ASDA
VESTEL

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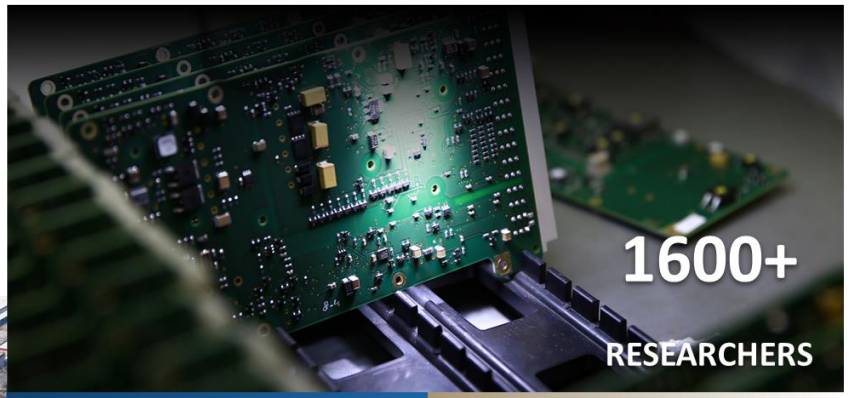
R&D Infrastructure

R&D

Manisa
R&D Center 1 (High End)
R&D Center 2 (Headquarters)
R&D Center 3 (Digital)
White Goods R&D Center
Vestel Defence
Vestelkom (Aegean Free Zone)

İTÜ Teknopark - Vestek

Shenzhen
Shanghai
China



Bristol UK

MCBÜ IDECA R&D Center
Manisa

AMONG THE
TOP 50
COMPANY IN EPO PATENT APPLICATIONS

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R&D Strategic Areas

R&D HOT TOPICS

TV / STB/DS
ANDROID - LINUX

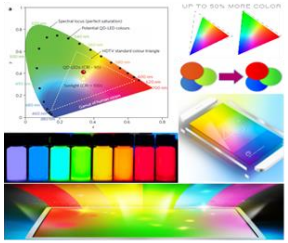
IoT / BIG DATA / CLOUD
SMARTHOME

OPTIC DESIGN & DISPLAY TECHNOLOGIES

OTOMOTIVE ELECTRONICS

BATERY TECHNOLOGIES

HEALTH SOLUTIONS



TV / LED LIGHTING
MATERIAL RESEARCH

5G
SMALL CELL / GPON...

USER INTERFACE

DIGITAL TRANSFORMATION VESTEL 4.0

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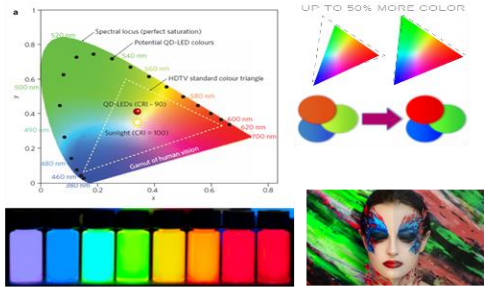
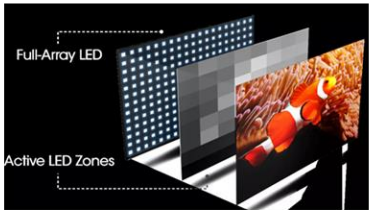
R&D Strategic Areas

TV

IMAGE QUALITY





OLED UHD 8K HDR QDOT

WIDE COLOR GAMUT

NEW GENERATION BLU

MICROLED

MINI LED BLU SOLUTIONS

NEW BUSINESS MODELS

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R&D Strategic Areas

STB & VS

SET-TOP-BOX

VISUAL SOLUTIONS

OPS
IFPD
HIGH BRIGHTNESS
STRECHED PANELS

2X 3X

VESTEL

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R&D Strategic Areas

IoT Technologies

CLOUD

HEALTH

INDISTRIAL IoT & INDUSTRY 4.0

SMART PRODUCTS

BIG DATA

SMART CITY

MOBILE

ARTIFICIAL INT. DEEP LEARNING

FAST PROTOTIPING

AUTOMOTIVE

RESEARCH & STARTUP'S

USER EXPERIENCE

CYBER SECURITY

SOCIAL RESPONSIBILITY & ACCESSIBLE TECHNOLOGIES

SMART HOME

International Study Visits of TARAL to EU Key Players

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R&D Strategic Areas

Smart Home Appliances

International Study Visits of TARAL to EU Key Players

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R&D Strategic Areas

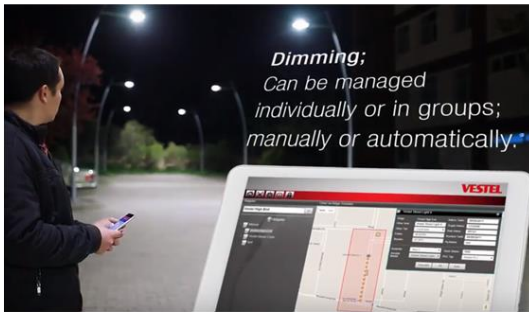
Vestel Smart City Applications

Electric Vehicle

Smart Payment Systems

Visual Solutions

Information Displays



Smart Road/Street

Lighting

International Study Visits of TARAL to EU Key Players

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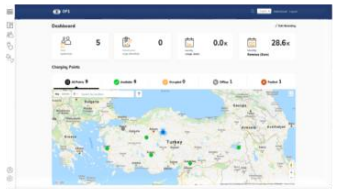
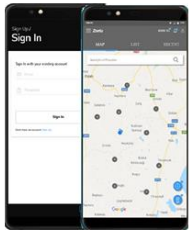
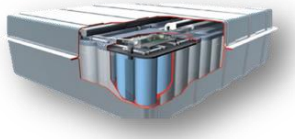
R&D Strategic Areas

Vestel Automotive Focus







ELECTRIC VEHICLES CHARGERS

CHARGE POINT MANAGEMENT SERVICES

INSTUREMENT CLUSTER & IVI SYSTEMS

BATTERY & BATTERY MANAGEMENT SYSTEMS

International Study Visits of TARAL to EU Key Players

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R&D Strategic Areas

AC/DC EVC

1 phase 3.7kW / 7.4kW	3 Phase 11kW / 22kW	RFID / NFC OCPP 1.6 over GSM

reddot award product design

CCS 120kW CHAdeMO 60kW	Type-2 43 kW Type-2 22 kW	LTE Ethernet WiFi	OCPP 1.6

- DC Ultrafast Charging Station
  - ✓ Multi standard charging outputs
  - ✓ 180 kW DC + 65 kW AC
  - ✓ Dynamic Load Management
  - ✓ 10” High Brightness Color Screen

International Study Visits of TARAL to EU Key Players

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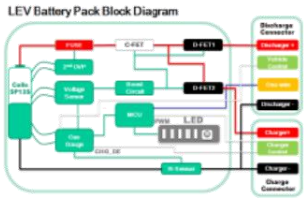
R&D Strategic Areas

BATTERY
PACKAGING
BMS

Cell selection



BMS, software, firmware, Fuel Gauge Design

Housing mechanical, insulator, nickel plate design

Battery pack & module design

Total solution: Charger, controller, LCD panel, motor

International Study Visits of TARAL to EU Key Players

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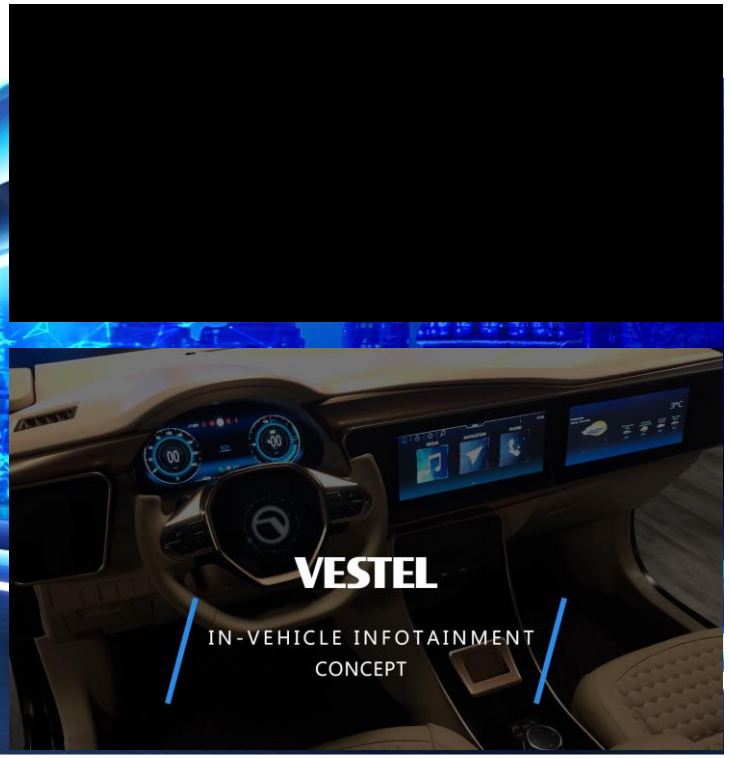
R&D Strategic Areas

Electrical Vehicle of Turkey



TOGG
TÜRKİYE'NİN OTOMOBİLİ GİRİŞİM GRUBU

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Smart Production

SMART PRODUCTION

International Study Visits of TARAL to EU Key Players

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9 Technological Factors That Triggers Industry 4.0

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VESTEL 4.0 Framework

SMART FACTORY

Artificial Intelligence	SMART QUALITY	SMART PRODUCTION	SMART SCM	SMART ENERGY	SMART MAINTENANCE

Integration Layer

ERP | SNC/TM | **MES** | CLOUD | EWM

Physical Layer

Industrial Robot | AGV | Automatic Warehouse | Automatic FVT - ICT | SMT | AOI | Injection | Inline CT Monitoring | Press

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VESTEL

International Study Visits of TARAL to EU Key Players

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Physical Layer

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Integration Layer

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MES (Manufacturing Execution System)

Instant Material Consumption

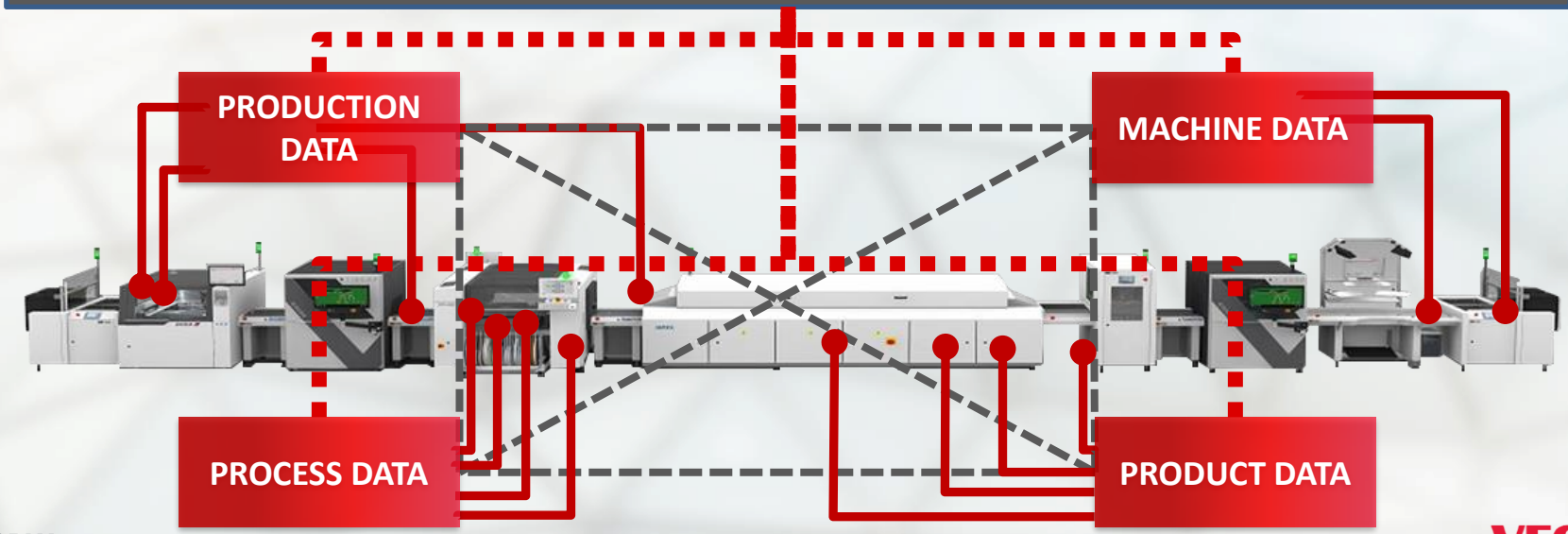
EWM Integration

Increase of Capacity/ OEE

End to End Tracebility

Digital SPC

MANUFACTURING EXECUTION SYSTEM



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MES (Manufacturing Execution System)

Setup without human

First time right production

Complexity Management

Full Process Traceability

Real Time Monitoring

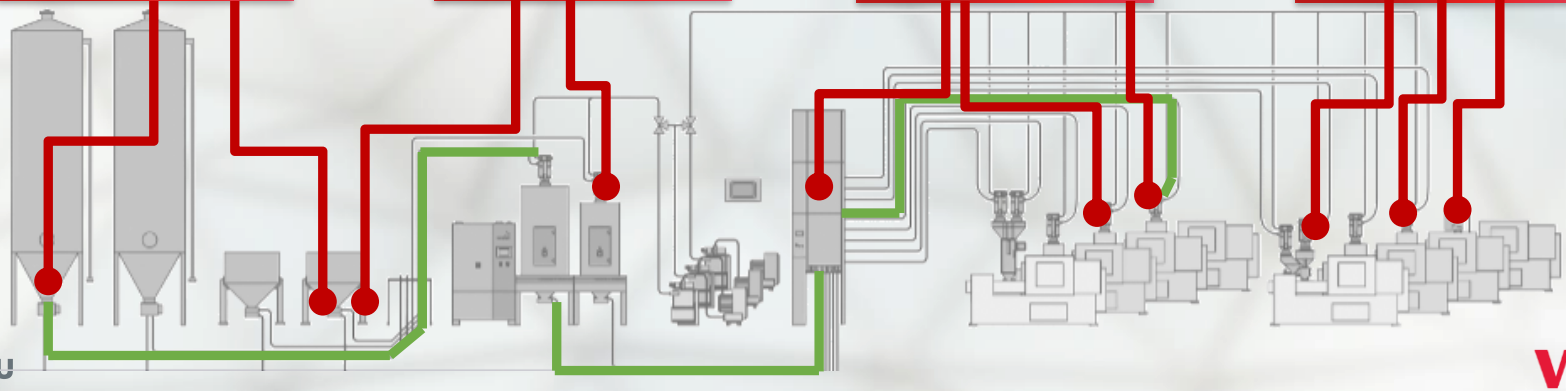
MANUFACTURING EXECUTION SYSTEM

MATERIAL MANAGEMENT

PROCESS MANAGEMENT

MOLD DATA MANAGEMENT

AUTOMATIC SET UP



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Big Data and Predictive Maintenance Applications

Operational Technologies

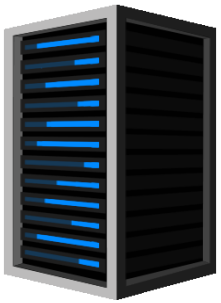
Current

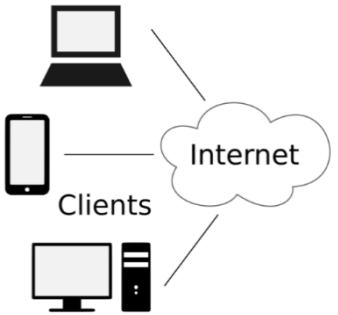
Laser

Infra-red

Vibration

InformationTechnologies





Artificial Intelligence

Predictive Maintenance
MRO Optimization

Breakdown Alert

Monitoring Equipment Conditions

Data Mining

Real Time Addressing

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VESTEL

REPUBLIC OF TURKEY
MINISTRY OF INDUSTRY
AND TECHNOLOGY

TÜBİTAK

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Reactive Life to Predictive Life Transition

Reactive

Responds to events that have already happened, such as incidents and accidents

Proactive

Actively seeks the identification of hazardous conditions through the analysis of the causes

Predictive

Analyzes system

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VESTEL

REPUBLIC OF TURKEY
MINISTRY OF INDUSTRY
AND TECHNOLOGY

TÜBİTAK

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Vestel 4.0

VESTEL ELECTRONICS 2016

VESTEL ELECTRONICS 2019

MOM (Manufacturing Operation Management)

PRODUCTION CAPABILITIES

PCBA

Metal Stamping

Plastic Injection

Paint Shop

laye

Styrofoam

Final Production

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R&D Projects Collaborations

EUREKA

50+ Projects
ITEA
Celtics
NEM …

European Commission

4 Projects
Kyklos 4.0
Connect4PLM
BAT4Ever…

Vestel joined around 30 different international projects since 2008. Company gives so much importance to be part of international projects. As company is a manufacturing / ODM company, the contribution of the company is to be end user in general.

Some important project topics: Product Lifecycle Management, Consumer Electronics Demos, Energy, Battery Technologies, Security, IoT, Health Solutions, 5G, Industry 4.0, Automotive Electronics, Electric Vehicle Charges, etc.

International Study Visits of TARAL to EU Key Players

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R&D Projects Collaborations

24.12.2019

	Program	Cluster	Proje Numarası	Project Acronym	Proje Adı	Başvuru Yılı	Partnerler
22	EUREKA	CELTIC	9170072	HoT	Home of Things	2017	Orange, Bosch, Ericsson, Lostar, Turkgen (Germany, France, Portugal)
23	EUREKA	CELTIC	9180069	IoD	Internet of Devops	2017	Siemens, T-systems, Enforma, Turkcell (Germany, Sweden, Spain)
24	EUREKA	CELTIC	9180068	Health 5G	Future eHealth powered by 5G	2017	VTT, Gasera, Televes, Tulso, Enforma, IMT (Finland, Republic of Korea, Hungary, Spain,
26	EUREKA	ITEA	9180041	PIANISM	Predictive and Prescriptive Automation in Smart Manufacturing	2017	B3 System, Çimtaş, Eczacıbaşı, Erste, Experis IT, Nimbeo, Orhan otomotiv, Tüpraş, Türktraktör (Canada, Turkey, PortugueseSpain)
41	EUREKA	CELTIC	9190015	TrustMed Cloud	Trusted medical infrastructure platform for telemedicine and medical video recording	2018	France, Germany, Turkey, Poland
46	EUREKA	ITEA	9190028	Cyber Factory	Addressing opportunities and threats for the Factory of the Future	2019	France, United Kingdom, Germany, Spain, Finland, Canada, Tr
47	FP7 / H2020	ICT	872570	KYKLOS 4.0	An Advanced Circular and Agile Manufacturing Ecosystem based on rapid reconfigurable manufacturing process and individualized consumer preferences	2019	Spain, Italy, France. Norway, Tr, Greece, Portugal
48	EUREKA	CELTIC	?	Edge IoT - IEoT	Intelligent Edge of Things	2019	Finland, Sweeden,Turkey,Portugal, Austria, United Kingdom,
49	EUREKA	ITEA			VR Surgery	2019	
50	FP7 / H2020	H2020			IMS - BİLGİ ÇOĞALTICILARI	2019	
51	EUREKA	EUROPIDES	?	IS4SE	AKILLI ÜRETİMDE KURALCI VE TAHMİNSEL BAKIM OTOMASYONU	2019	TR, Portugal,
52	FP7 / H2020	ICT	952623	Demoiselle	DEMonstrating Infrastructure Security Evolution for Long-Lived Ecosystems	2019	• Trialog (SME) -FR • Institut de recherche technologique SystemX (Research institute) -FR • Universität Ulm (University) -DE • Katholic Universiteit Leuven (University) -BE • Secure-IC SAS (SME) -FR • Denso Automotive Deutschland Gmbh (Industry) -DE • Vestel Elektronik San. Ve Tic. AS (Industry) -TR • Sestek Ses ve Iletisim Bilg. Tekn. San. Ve Tic. AS (SME) -TR • Teknologian tutkimuskeskus VTT Oy (Research institute) -FI • Riscure BV (SME) -NL
53	FP7 / H2020	BAT	LC-BAT-14-2020	SELF-HEALING	Self-healing functionalities for long lasting battery cell chemistries	2020	Turkey, Germany,Norway, Belgium, Spain, Italy,

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Collaboration Offer

What can VESTEL bring to a consortium?

- Industrial Partner
- Demo / Pilot Production / Demonstration /
- HW / SW / Test and Validation
- Use case scenario for commercialisation

For Display Technologies, IoT, Industry 4.0, Batery Technologies, Automative Electronics, AI/AR/VR applications in related horizon projects.

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Vestel Electronics
Turkey

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