



2020 SEDNA

Company Profile





SEDNA ENG has started the R&D of the magnetic mixer from 1993, produced and sold it from 2006. Nowadays SEDNA ENG has exported to whole world and been doing its best as reliable global partner.

**As our experiences accumulated for over 20 years,
We can recognize exactly what customers need,
so offer best solutions for them to choose better one.
With the network in various industrial and R&D field,
outstanding quality, know-how, we can suggest the correct answer
for fulfilling the needs of constantly changing market.**

**With branches and agencies all over the world,
over 100 cooperative companies, R&D laboratory of university,
technology, quality control and so on, we can promise
your success and development by our excellent abilities.**



**SEDNA ENG Co., Ltd.
Representative Director
Hyuck Bae, Kim**





- 2019** • Government Supporting R&D for Magnetic Mixer Collaboration
 - Academic-Industrial Collaboration with Yeungnam Univ.
 - "Parts Specialized Company" registered
 - "Gyeonggi Province Promising SME" registered
 - "Young Man-Friendly Hidden Champion Company" registered
 - **Magnetic Pump SSP Released**
 - **Magnetic Pump 3-A Certified**
 - **Magnetic Pump EHEDG Certifying**
 - **Floating type Mixer SDF Released**
 - **Horizontal-Mount Low Shear Mixer SHM Released**
 - **Outer Flushing Channeled Mixer SROT Released**
-
- 2018** • New Office & factory
 - Dept. of magnetic pump established
 - Awarded 2018 "Outstanding Export Performance"
 - Awarded 2018 "Korea hidden Champion company"
 - "Human Resource Development SME" registered
 - "Korea Innovative Business company(INNOBIZ)" registered
 - **ISO9001:2015 Certified**
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- 2017** • Accumulated amount of export 5 million USD achievement
 - China branch relocated(Qingdao)
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- 2016** • **Mid Shear Mixer SDP for Pulverization Released**
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- 2015** • **High Shear Mixer SSN for Emulsification Released**
 - **Enclosed Chamber Ventilator SDC Released**
 - Accumulated amount of export 3 million USD achievement
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- 2014** • Annexed R&D Lab certified from KOITA
 - Academic-Industrial Collaboration with Sogang Univ.
 - **Magnetic Mixer 3-A Certified**
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- 2013** • **High Shear Mixer SSM for Mixing Suspension Released**
 - **Top-Mount Mixer SRFT for Bio-Reaction Released**
 - ISO9001:2008 Certified
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- 2012** • China agency(Shanghai) contracted
 - Vietnam Branch(Ho chi minh) established
 - **Mid Shear Mixer SRD for Dispersion Released**
 - **CE Conformity Certified**
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- 2010** • China Branch(Changchun) established
 - India-Bangladesh Branch(Dhaka) established
 - **Vertical-Mount mixer SRF for Bio-Reaction Released**
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- 2006** • Changed to stock company "SEDNA ENG Co., Ltd."
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- 1993** • 'Hanbaek' the sanitary system manufacturer established





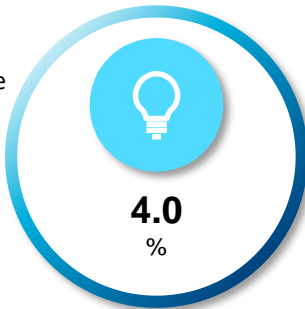
“Better than yesterday, SEDNA”



SEDNA ENG's factory and office space in Korea alone



The number of magnetic mixers and pump produced every year



Over 4% of turnover was invested in R&D in 2019



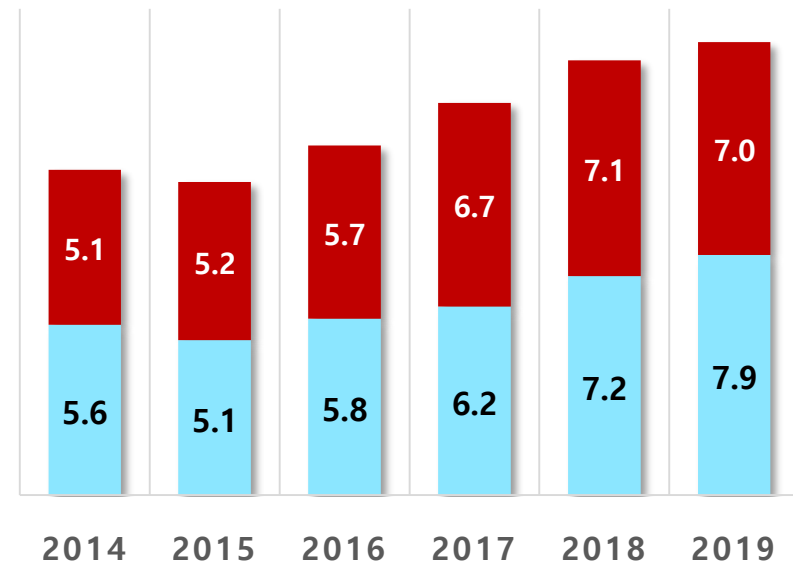
The number of overseas branches and agencies



Global network of over 200 cooperative partners

We, SEDNA, has strived hard and constantly to find out a way to meet customers' various needs. And always found out the answer for it, so we could accomplish steady growth of sales and market share in the Domestic and Global industries related to the sanitary process plant.

Growth Rate (unit : %) Domestic Overseas





“Strict standards of SEDNA”

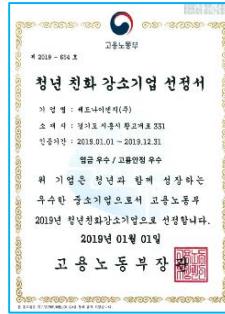
Promising SME In Gyeonggi



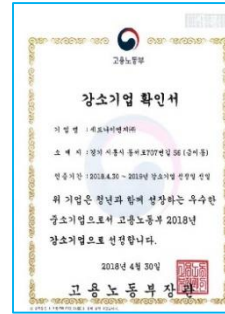
INNOBIZ



Young man-Friendly Company



Korea Hidden Champion Company



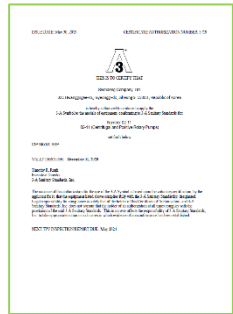
Parts Specialized Company



Annexed R&D Lab Cert



3-A(Pump)



3-A(Mixer)



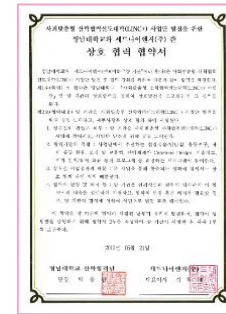
CE



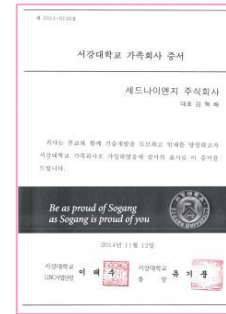
ISO 9001:2015



Collaboration (Yeungnam Univ.)



Collaboration (Sogang Univ.)



상표등록증



특허증



특허증



실용신안등록증



디자인등록증



특허증





“The Best Solution for Sanitary System and Hazardous Liquid Management”



Sanitation

- Blocking contaminated matter and leakage in and out
- Can be cleaned by CIP, SIP and suitable for GMP, HACCP
- Materials FDA, USP certified



Safety

- Mixing or Pumping under perfectly sealed state
- Extremely low risk of safety accident



Efficiency

- Installed on bottom of tank, space on top is still available
- Low electricity consumption
- Easy, low-cost maintenance and semi-permanent life span for the SEALLESS design



SDM series



Low Shear Agitator
General stirring
RPM : 300 ~ 450
Volume : 10 ~ 50,000 liter

SDB series



Low Shear Agitator
Bio, Cell culture etc
RPM : 110 ~ 220
Volume : 10 ~ 10,000 liter

SDL series



Low Shear Agitator
Bio, Beverage, Anti-precipitation
RPM : 110 ~ 220
Volume : 10 ~ 50,000 liter

SDF series



Low Shear Agitator
General stirring
RPM : 300 ~ 450
Volume : 10 ~ 2,000 liter

SIB series



Welding plate-combined Bottom
For a small tank, fermenter, reactor
Net Weight : 3.12 ~ 12.78 kg
Net Volume : 0.88 ~ 3.42 liter

SRD series



Mid Shear Agitator
Dispersion
RPM : 950 ~ 1,800
Volume : 20 ~ 5,000 liter

SDP series



Mid Shear Agitator
Pulverization
RPM : 950 ~ 1,800
Volume : 20 ~ 5,000 liter

SSN series



High Shear Agitator
Emulsification, Homogenization
RPM : 3,000 ~ 3,600
Volume : 20 ~ 2,000 liter

SHM series



Horizontal-Mount Agitator
Bio, Beverage, Anti-precipitation
RPM : 1,200 ~ 1,800
Volume : 20,000 ~ 150,000 liter



SRF series



Vertical-Mount Agitator
Bio-Reaction, Fermentation etc
RPM : 110 ~ 500
Volume : 10 ~ 10,000 liter

SRFT series



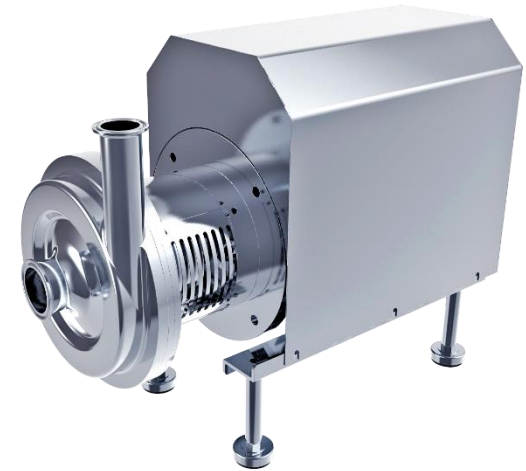
Top-Mount Agitator
Bio-Reaction, Fermentation etc
RPM : 110 ~ 220
Volume : 10 ~ 15,000 liter

SROT series



Outer Flushing Channeled Agitator
Bio-Reaction, Fermentation etc
RPM : 110 ~ 220
Volume : 10 ~ 15,000 liter

SSP series



Magnetic Centrifugal Pump
Water treatment, CIP etc
Flow : 1 ~ 50 m³/hr
Head : 5 ~ 50m

Using USP, FDA certified material for quality improvement

SEDNA complies with **3A** and **EHDG** standard on elastomers.

- Easy CIP – SIP
- Impervious to micro-organisms
- Easy Installation
- Reliability (is complied with EHDG)
- Pressure resistance (25 Bar to -10 °C, 120 Bar to 120°C)
- Steam sterilization under 140°C, 3 Bar condition
- Suitable for chemicals used to cleaning and sterilizing
- Anti-bacterial property at above temperature and pressure



SEDNA's chemical resistance table



EPDM(Ethylene Propylene Diene Monomer)
Heat resistance(to 150°C)
Long-time life span



Silicon Rubber
Inert to most chemicals, acids, alkalis
Excellent biocompatibility



Viton
Chemical resistance
Resistance to heat, oil, halogen hydrocarbon, condensed acid and alkali, animal and vegetable oil



Teflon Encapsulated O-ring
Inert to most chemicals, acids, alkalis
No Contaminated residue due to hydrophobic property



R&D on bearings as a key part of magnetic system, excellent material for reliability

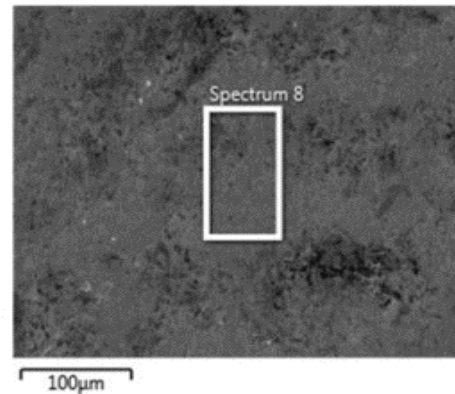


SEDNA 베어링		Tungsten Carbide(TC, WC)	Silicon Carbide(SiC)	ZrO2
Corrosion Test	Mass	 83.4819	 18.3648	 34.6818
	Alkali	83.4819	18.3648	34.6818
	Acid	83.3673	18.3648	34.6810

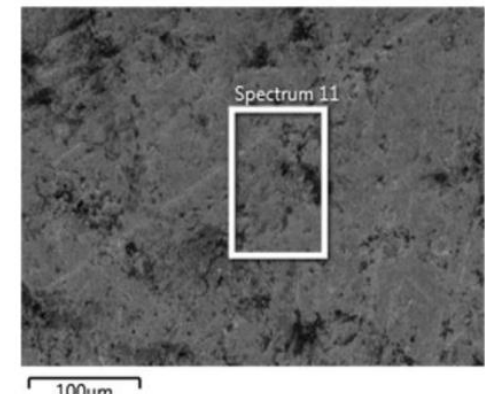
Tested with **Undiluted solution** at 80°C for 24hrs, **Alkali 12.3 ~ 12.8 pH**, **Acid 1.8 ~ 2.2 pH**

SEDNA TC bearing material EDX-SEM analysis

As a result of the SEM analysis, we use materials with better performance for issues such as microbial and fungal growth, corrosion and wear caused by chemicals for less pores on the cross section.



SEDNA bearing cross-section SEM scan



Other company bearing cross section SEM scan





SEDNA Partners



All over the World





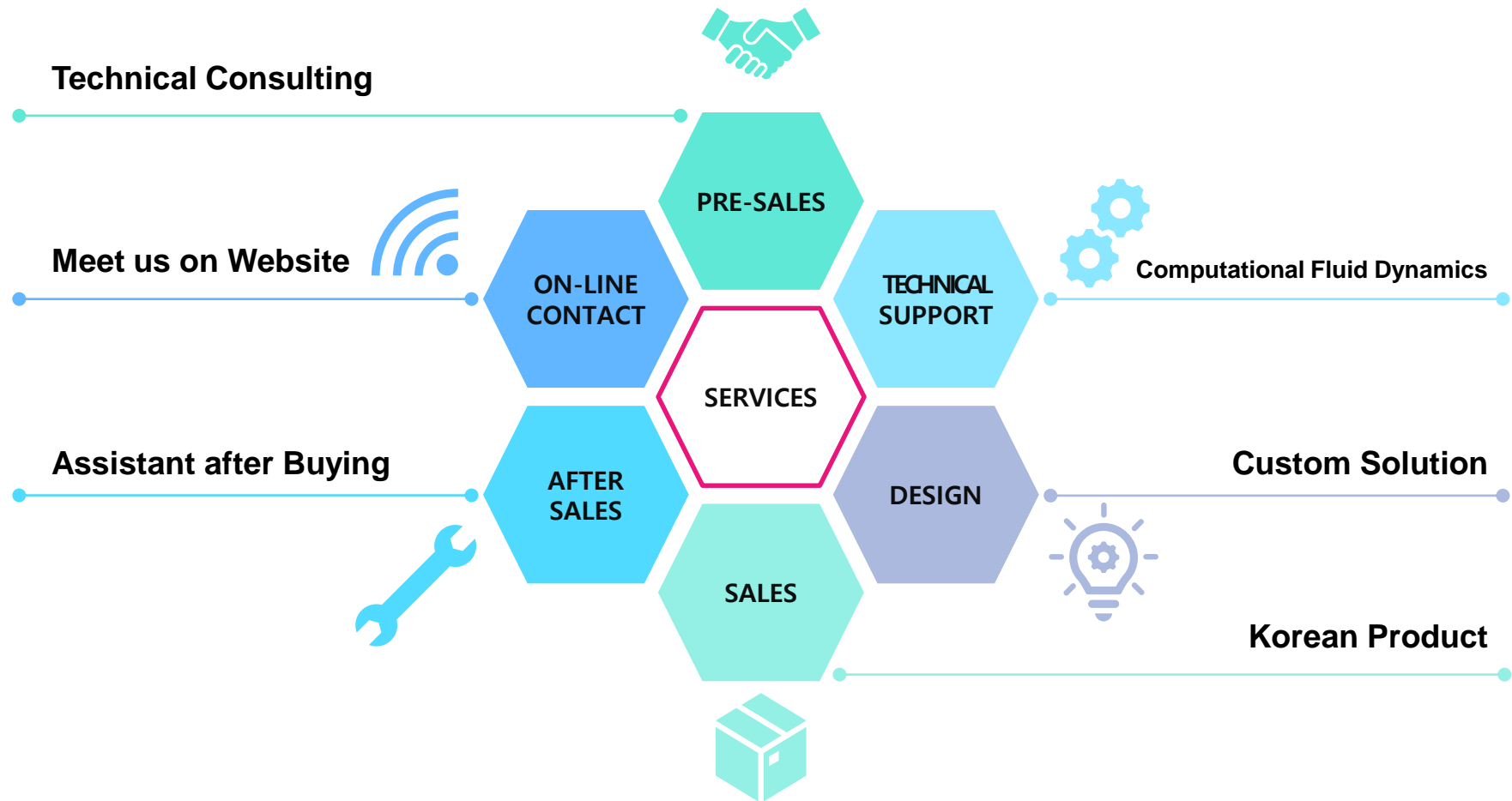
SAMSUNG BIOLOGICS













With Simulation analysis, SEDNA can minimize **trial and error** of choosing system, so offer optimized process solution.

- **CFD (Computational Fluid Dynamics)**

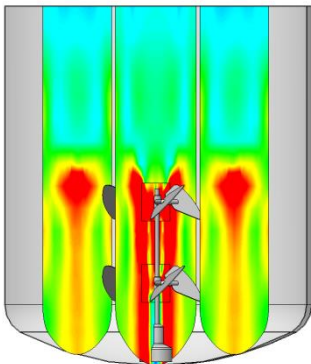
CFD means simulating flows made by agitators with computer, so how liquid is agitated can be expected.

- **FEM (Finite Elements Analysis)**

FEM helps to decide the optimal products by analyzing interaction(load, shear stress etc) with the fluid made by the agitators.

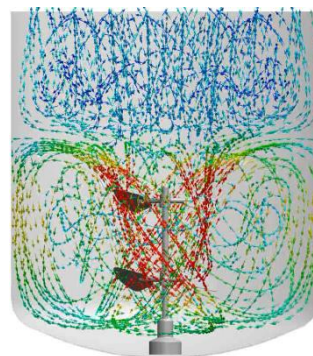
On-site Diagnosis

Engineering team from SEDNA diagnoses system application by visiting to site or reviewing drawings



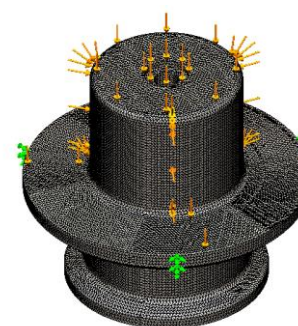
Simulation

Based on the reviewed data, construct 3D modeling, choose the products, test the CFD, FEM



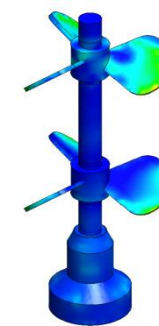
Solution

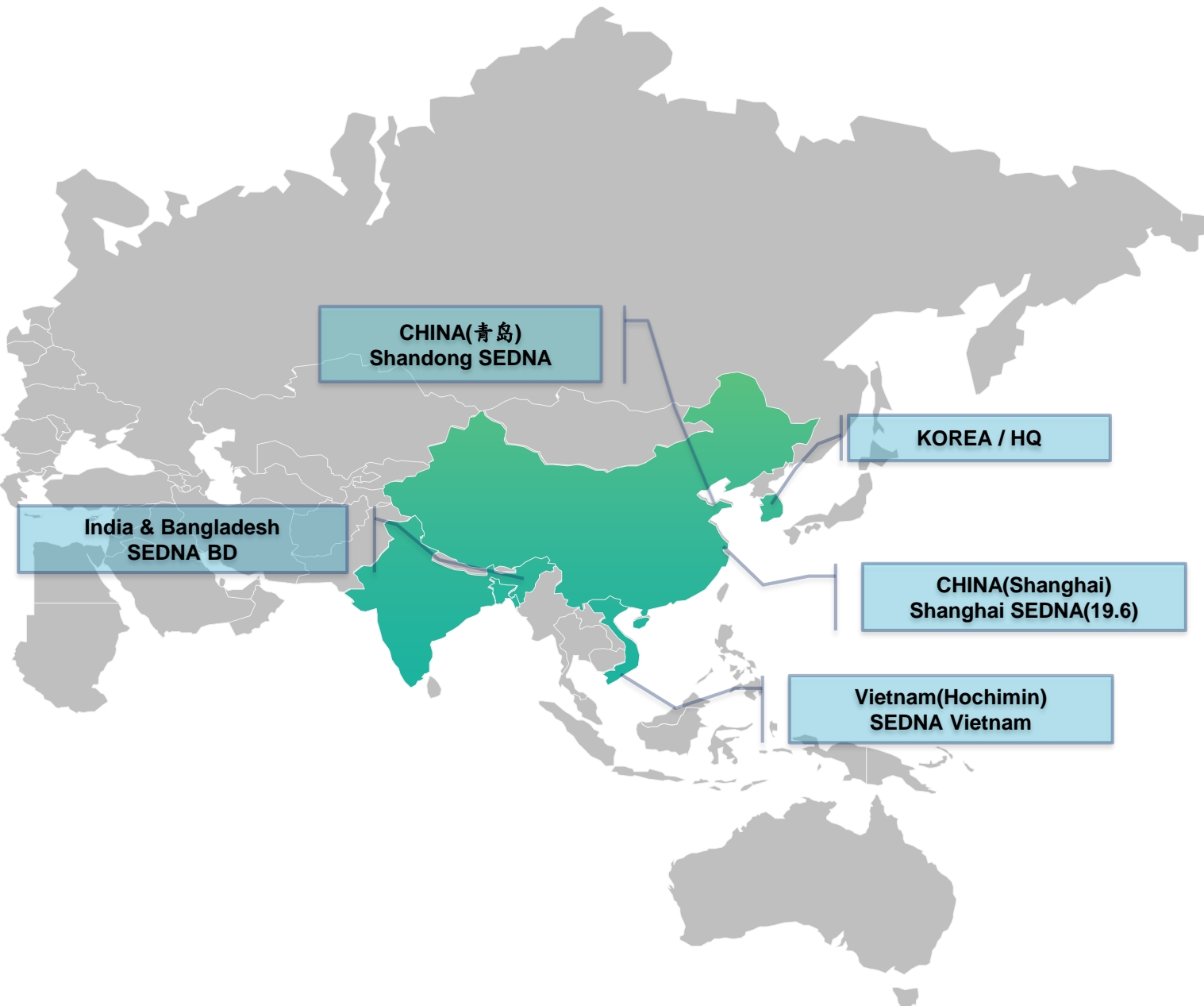
Suggest the optimal product through the review on the simulation and technical data



Adjustment & Application

Revalue and re-simulate from additional requirement, offer final solution





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