

## About the SMART DSC 2022 International Conference

The conference was conducted from 20 July 2022 to 22 July 2022 for three days.

**Computer Science & Engineering**

**KEYNOTE SPEAKERS**

- Prof. Philippe Fournier-Viger**  
Harbin Institute of Technology, Shenzhen, Guangdong, China.
- Dr. Shumaila Javaid**  
Shanghai Research Institute for Intelligent Autonomous Systems, Tongji University, Shanghai, China.
- Dr. Snehashu Pal**  
National Institute of Technology Rourkela, Odisha, India.
- Prof. Jose L. Seo**  
Chair, Computer Science Department, College of Information and Computing Sciences, University of Santo Tomas, Philippines.
- Dr. Khuder Altangerel**  
Head of Computer Science Department, School of Information Communication Technology, Mongolian University of Science and Technology, Ulaanbaatar, Mongolia.
- Dr. Djebali Sonia**  
ESILV - Ecole Supérieure d'Ingénieurs Léonard de Vinci, Paris, France.
- Dr. Pelin Angin**  
Middle East Technical University, Ankara, Turkey.
- Dr. Divya Midhunchakkarakavathy**  
Faculty of Computer Science and Multimedia, Lincoln University College, Selangor, Malaysia.

**FIFTH INTERNATIONAL CONFERENCE ON SMART TECHNOLOGIES IN DATA SCIENCE AND COMMUNICATION (SMART DSC-2022)**

**20<sup>th</sup> - 22<sup>nd</sup> JULY 2022**

Join: <https://bit.ly/SmartDSC2022>

## Day -1: 20/07/2022 – Wednesday: Opening Ceremony, Keynote Talks and Paper Presentations







5 <sup>th</sup> INTERNATIONAL CONFERENCE ON SMART DSC-2022	
July 20-22, 2022	
Program Schedule (Online Mode)	
Time	Day - 1: Wednesday, 20 <sup>th</sup> July 2022
10:00 - 10:30	INAUGURAL
10:30 - 11:30	<b>Keynote - 1: Dr. Shumaila Javaid, Shanghai Research Institute for Intelligent Autonomous Systems, Tongji university, Shanghai, China.</b> <b>(Medical sensors and their integration in Wireless Body Area Networks for pervasive healthcare delivery)</b>
	Join: <a href="http://bit.ly/SmartDSC2022">http://bit.ly/SmartDSC2022</a>

11:30 - 11:45	<i>Break</i>
11:45 - 12:45	<b>Keynote - 2: Philippe Fournier-Viger, Harbin Institute of Technology, Shenzhen, Guangdong, China.</b> (Advances and challenges for the automatic discovery of interesting patterns in data)
	Join: <a href="http://bit.ly/SmartDSC2022">http://bit.ly/SmartDSC2022</a>
12:45 - 13:30	<i>Lunch Break</i>
13:30 - 14:30	<b>Keynote - 3: Dr. Snehanthu Pal, National Institute of Technology Rourkela Rourkela, Odisha, India.</b> (Materials Informatics)
	Join: <a href="http://bit.ly/SmartDSC2022">http://bit.ly/SmartDSC2022</a>
14:30 - 15:30	<b>Presentation Schedule</b>
	Paper ID: 001, 002, 004, 015, 016, 017
	For Presentations Join: <a href="http://bit.ly/SmartDSC2022">http://bit.ly/SmartDSC2022</a>
15:30 - 15:40	<i>Break</i>
15:40 - 16:40	<b>Presentation Schedule</b>
	Paper ID: 023, 024, 025, 030, 031, 039
	For Presentations Join: <a href="http://bit.ly/SmartDSC2022">http://bit.ly/SmartDSC2022</a>


## Registrations

On the first day, the registration process had started at 8.30 AM and completed by 9.30 AM.

On the first day, there was the opening ceremony. The entire conference had conducted through online. The opening ceremony also conducted through online using WebEx Platform. The General Chair Prof. T. Pavan Kumar, of the Smart DSC 2022 gave the opening remarks of the conference, Chief Guest of the Event Prof. G. Pardha Saradhi Varma, Vice-Chancellor, KL Deemed to be university addressed the gathering and Prof. Kingsley Ogudo, Editor SMART DSC-2022, from University of Johannesburg, South Africa shared his views about the conference. Guest of Honor Prof. Philippe Fournier-Viger, General Chair, SMART DSC-2022, from Shenzhen University (China) gave his insights about the conference.


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 Philippe Fournier-Viger	Bikash Debnath	Dinesh Reddy	Nelllutla Ravin...	Mohan mahanty
 Dr.G.P.S.Varma, Vice-Chance...	 4093 Mr.M.VENKATA NARESH	S NagaMallik Raj	 6300 Dr. DEBNATH BHATTA...	Dr. Mohd. Abd...
5254 Ms.V.MO...	Dr TK Rama Kr...	 Dr.T.PAVAN KUMAR	2000030229 ...	Anantha Rao ...
Sangeeta Pars...	5257 DR. K. B...	4277-Lp MAG...	CR063	Dr.P.Pandiarai

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JULY 20<sup>th</sup> 2022


**FIFTH INTERNATIONAL CONFERENCE ON SMART TECHNOLOGIES IN DATA SCIENCE AND COMMUNICATION (SMART DSC-2022)**

Join: <https://bit.ly/SmartDSC2022>


**KEYNOTE SPEAKERS**



**Prof. Philippe Fournier-Viger**  
Harbin Institute of Technology, Shenzhen, Guangdong, China.



**Dr. Shumaila Javaid**  
Shanghai Research Institute for Intelligent Autonomous Systems, Tongji University, Shanghai, China.



**Dr. Snehangshu Pal**  
National Institute of Technology Rourkela, Odisha, India.

## Keynote -1:



The slide features a network diagram background with nodes and connecting lines. At the top left, logos for KAUST, Computer Science & Engineering, and various educational institutions are displayed. The top right includes the Springer logo and the date 'July 20-22, 2022'. The central text reads 'FIFTH INTERNATIONAL CONFERENCE ON SMART TECHNOLOGIES IN DATA SCIENCE AND COMMUNICATION (SMART DSC-2022)'. Below this, a circular portrait of Dr. Shumaila Javaid is shown with the text 'KEYNOTE SPEAKER' around it. To the right of the portrait, her name and affiliation are listed, followed by the date and time of her keynote, and a brief description of the topic. A URL for joining the conference is provided at the bottom.

Computer Science & Engineering

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July 20-22, 2022

**FIFTH INTERNATIONAL CONFERENCE ON  
SMART TECHNOLOGIES IN DATA SCIENCE  
AND COMMUNICATION  
(SMART DSC-2022)**

**KEYNOTE SPEAKER**

**Dr. Shumaila Javaid**  
Shanghai Research Institute for Intelligent Autonomous Systems,  
Tongji University, Shanghai, China.

**20<sup>th</sup> JULY 2022** 10:30 to 11:30 (IST)

**Keynote**  
Medical Sensors and their Integration in  
Wireless Body Area Networks for Pervasive Healthcare Delivery

Join: <https://bit.ly/SmartDSC2022>

Keynote talk by Dr. Shumaila Javaid, Shanghai Research Institute for Intelligent Autonomous Systems, Tongji university, Shanghai, China, entitled “Medical sensors and their integration in Wireless Body Area Networks for pervasive healthcare delivery” from 10:30 to 11:30 (IST).

## Keynote -2:



The slide features a network diagram background with nodes and connecting lines. At the top left, logos for KAUST, Computer Science & Engineering, and various educational institutions are displayed. The top right includes the Springer logo and the date 'JULY 20<sup>th</sup>-22<sup>nd</sup> 2022'. The central text reads 'FIFTH INTERNATIONAL CONFERENCE ON SMART TECHNOLOGIES IN DATA SCIENCE AND COMMUNICATION (SMART DSC-2022)'. Below this, a circular portrait of Prof. Philippe Fournier-Viger is shown with the text 'KEYNOTE SPEAKER' around it. To the right of the portrait, his name and affiliation are listed, followed by the date and time of his keynote, and a brief description of the topic. A URL for joining the conference is provided at the bottom.

Computer Science & Engineering

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JULY 20<sup>th</sup>-22<sup>nd</sup> 2022

**FIFTH INTERNATIONAL CONFERENCE ON  
SMART TECHNOLOGIES IN DATA SCIENCE  
AND COMMUNICATION  
(SMART DSC-2022)**

**KEYNOTE SPEAKER**

**Prof. Philippe Fournier-Viger**  
Harbin Institute of Technology, Shenzhen, Guangdong, China.

**20<sup>th</sup> JULY 2022** 11:45 to 12:45 (IST)

**Keynote**  
Advances and Challenges for the Automatic Discovery of  
Interesting Patterns in Data

Join: <https://bit.ly/SmartDSC2022>

The next session continued with another keynote lecture had delivered by **Philippe Fournier-Viger**, Harbin Institute of Technology, Shenzhen, Guangdong, China, entitled “Advances and challenges for the automatic discovery of interesting patterns in data” from 11:45 to 12:45 (IST)

### Keynote -3:

**KLU** (KANNUR UNIVERSITY) | **Computer Science & Engineering**

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**FIFTH INTERNATIONAL CONFERENCE ON SMART TECHNOLOGIES IN DATA SCIENCE AND COMMUNICATION (SMART DSC-2022)**

**JULY 20<sup>th</sup>-22<sup>nd</sup> 2022**

**KEYNOTE SPEAKER**

**Dr. Snehanshu Pal**  
National Institute of Technology Rourkela, Odisha, India

**20<sup>th</sup> JULY 2022** 13:30 to 14:30 (IST)

**Keynote**  
Materials Informatics

Join: <https://bit.ly/SmartDSC2022>

The Post Lunch Session started with an another keynote lecture delivered by **Dr. Snehanshu Pal**, National Institute of Technology Rourkela, Rourkela, Odisha, India, entitled “Materials Informatics” from 13:30 to 14:30 (IST)

### Paper Presentations:

After this session, from 14:30 to 16:30 (IST) paper presentations had started online and 12 papers were presented in this slot with a short break. Two External Session Chairs outside the university and Three Internal Session Chairs within the university had evaluated the presentations. All the participants had presented their papers through online as per the schedule given by the organizing team of the conference. Some of the screens of the paper presentations (Slot-1: Paper ID: 001, 002, 004, 015, 016, 017 and Slot-2: Paper ID: 023, 024, 025, 030, 031, 039):

## Day 2: 21/07/2022 – Thursday: Keynote Talks and Paper Presentations

**KL UNIVERSITY**  
Computer Science & Engineering  
CATEGORICAL UNIVERSITY  
ACCREDITED BY  
RANKED 27  
EDUCATIONAL

**Springer**  
JULY 21<sup>st</sup> 2022

**FIFTH INTERNATIONAL CONFERENCE ON SMART TECHNOLOGIES IN DATA SCIENCE AND COMMUNICATION (SMART DSC-2022)**

**KEYNOTE SPEAKERS**

**Prof. Jose L. Seño**  
Chair, Computer Science Department,  
College of Information and Computing Sciences,  
University of Santo Tomas, Philippines

**Dr. Khuder Altangerel**  
Head of Computer Science Department,  
School of Information, Communication Technology,  
Mongolian University of Science and Technology, Ulaanbaatar, Mongolia

**Dr. Djebali Sonia**  
ESILV - Ecole Supérieure d'Ingénieurs Léonard de Vinci,  
Paris, France

Join: <https://bit.ly/SmartDSC2022>

### 5<sup>th</sup> INTERNATIONAL CONFERENCE ON SMART DSC-2022

July 20-22, 2022

#### Program Schedule (Online Mode)

Time	Day - 2: Thursday, 21 <sup>st</sup> July 2022
10:30 - 11:30	<b>Keynote -4:</b> Dr. Khuder Altangerel, <b>Mongolian University of Science and Technology, Mongolia.</b> <b>(Bio-inspired Computing)</b> Join: <a href="http://bit.ly/SmartDSC2022">http://bit.ly/SmartDSC2022</a>
11:45 - 12:45	<b>Keynote - 5:</b> Prof. Jose L. Seño, <b>University of Santo Tomas, Philippines</b> <b>(The Effects of Overlapped Speech Detection and Speech Features Selection in the Performance of Speaker Diarization)</b> Join: <a href="http://bit.ly/SmartDSC2022">http://bit.ly/SmartDSC2022</a>
12:45 - 13:30	<b>Lunch Break</b>
13:30 - 14:30	<b>Keynote - 6:</b> Djebali Sonia, <b>ESILV - Ecole Supérieure d'Ingénieurs Léonard de Vinci, Paris, France</b> <b>(Big Data and Tourist Segmentation)</b> Join: <a href="http://bit.ly/SmartDSC2022">http://bit.ly/SmartDSC2022</a>
14:30 - 14:45	<b>Break</b>
14:45 - 16:00	<b>Presentation Schedule</b> Paper ID: 041, 044, 046, 047, 048, 094 For Presentations Join: <a href="http://bit.ly/SmartDSC2022">http://bit.ly/SmartDSC2022</a>
<b>Close of Day-2 Schedule</b>	

#### Keynote -4:

The poster for Keynote -4 features a network diagram background with nodes and connecting lines. At the top left, it displays the logos of KLU (Kazan Federal University) and Computer Science & Engineering. At the top right, the Springer logo is shown alongside the dates JULY 20<sup>th</sup>-22<sup>nd</sup> 2022. The central text reads: **FIFTH INTERNATIONAL CONFERENCE ON SMART TECHNOLOGIES IN DATA SCIENCE AND COMMUNICATION (SMART DSC-2022)**. Below this, a circular portrait of Dr. Khuder Altangerel is labeled 'KEYNOTE SPEAKER'. To the right of the portrait, his name and affiliation are listed: **Dr. Khuder Altangerel**, Head of Computer Science Department, School of Information, Communication Technology, Mongolian University of Science and Technology, Ulaanbaatar, Mongolia. The date and time of the keynote are specified as **21<sup>st</sup> JULY 2022 10:30 to 11:30 (IST)**. The topic is **Keynote Bio-inspired Computing**. The join link is <https://bit.ly/SmartDSC2022>. A solid purple bar is at the bottom.

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**JULY 20<sup>th</sup>-22<sup>nd</sup> 2022**

**FIFTH INTERNATIONAL CONFERENCE ON SMART TECHNOLOGIES IN DATA SCIENCE AND COMMUNICATION (SMART DSC-2022)**

**KEYNOTE SPEAKER**

**Dr. Khuder Altangerel**  
Head of Computer Science Department,  
School of Information, Communication Technology,  
Mongolian University of Science and Technology, Ulaanbaatar, Mongolia

**21<sup>st</sup> JULY 2022 10:30 to 11:30 (IST)**

**Keynote**  
Bio-inspired Computing

Join: <https://bit.ly/SmartDSC2022>

On the second day, the fourth keynote address had given by Dr. Khuder Altangerel, Mongolian University of Science and Technology, Mongolia, entitled “Bio-inspired Computing” from 10:30 to 11:30 (IST)

#### Keynote -5:

The poster for Keynote -5 features a network diagram background with nodes and connecting lines. At the top left, it displays the logos of KLU (Kazan Federal University) and Computer Science & Engineering. At the top right, the Springer logo is shown alongside the dates JULY 20<sup>th</sup>-22<sup>nd</sup> 2022. The central text reads: **FIFTH INTERNATIONAL CONFERENCE ON SMART TECHNOLOGIES IN DATA SCIENCE AND COMMUNICATION (SMART DSC-2022)**. Below this, a circular portrait of Prof. Jose L. Seño is labeled 'KEYNOTE SPEAKER'. To the right of the portrait, his name and affiliation are listed: **Prof. Jose L. Seño**, Chair, Computer Science Department, College of Information and Computing Sciences, University of Santo Tomas, Philippines. The date and time of the keynote are specified as **21<sup>st</sup> JULY 2022 11:45 to 12:45 (IST)**. The topic is **Keynote The Effects of Overlapped Speech Detection and Speech Features Selection in the Performance of Speaker Diarization**. The join link is <https://bit.ly/SmartDSC2022>. A solid purple bar is at the bottom.

**Computer Science & Engineering**

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**JULY 20<sup>th</sup>-22<sup>nd</sup> 2022**

**FIFTH INTERNATIONAL CONFERENCE ON SMART TECHNOLOGIES IN DATA SCIENCE AND COMMUNICATION (SMART DSC-2022)**

**KEYNOTE SPEAKER**

**Prof. Jose L. Seño**  
Chair, Computer Science Department,  
College of Information and Computing Sciences, University of Santo Tomas, Philippines

**21<sup>st</sup> JULY 2022 11:45 to 12:45 (IST)**

**Keynote**  
The Effects of Overlapped Speech Detection and  
Speech Features Selection in the Performance of Speaker Diarization

Join: <https://bit.ly/SmartDSC2022>

The next keynote talk was given by Prof. Jose L. Seño, University of Santo Tomas, Philippines, entitled “The Effects of Overlapped Speech Detection and Speech Features Selection in the Performance of Speaker Diarization” from 11:45 to 12:45 (IST).

## Lunch Break

### Keynote -6:



The banner for the Fifth International Conference on Smart Technologies in Data Science and Communication (SMART DSC-2022) features a network of colorful dots and lines. Logos for KLU University (Computer Science & Engineering), Springer, and the conference dates (JULY 20<sup>th</sup>-22<sup>nd</sup> 2022) are visible. The central text reads: **FIFTH INTERNATIONAL CONFERENCE ON SMART TECHNOLOGIES IN DATA SCIENCE AND COMMUNICATION (SMART DSC-2022)**.

**KEYNOTE SPEAKER**



**Dr. Djebali Sonia**  
ESILV - Ecole Supérieure d'Ingénieurs Léonard de Vinci, Paris, France.

**21<sup>st</sup> JULY 2022 13:30 to 14:30 (IST)**

**Keynote**  
Big Data and Tourist Segmentation

Join: <https://bit.ly/SmartDSC2022>

In the Post Lunch Session, the sixth keynote talk was given by Djebali Sonia, ESILV - Ecole Supérieure d'Ingénieurs Léonard de Vinci, Paris, France, entitled “Big Data and Tourist Segmentation” from 13:30 to 14:30 (IST).

### Paper Presentations:

After this session, from 14:45 to 16:30 (IST), Paper Presentations started online and 6 papers were presented in this slot. Two External Session Chairs outside the university and Three Internal Session Chairs within the university had evaluated the presentations. All the participants had presented their papers through online as per the schedule given by the organizing team of the conference.

## Day 3: 22/07/2022 – Friday: Paper Presentations, Keynote Sessions and Valedictory

**Computer Science & Engineering**

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**JULY 22<sup>nd</sup> 2022**

**FIFTH INTERNATIONAL CONFERENCE ON SMART TECHNOLOGIES IN DATA SCIENCE AND COMMUNICATION (SMART DSC-2022)**

**KEYNOTE SPEAKERS**

**Dr. Pelin Angin**  
Middle East Technical University, Ankara, Turkey.

**Dr. Divya Midhunchakkaravarthy**  
Faculty of Computer Science and Multimedia,  
Lincoln University College, Selangor, Malaysia

Join: <https://bit.ly/SmartDSC2022>

5 <sup>th</sup> INTERNATIONAL CONFERENCE ON SMART DSC-2022	
July 20-22, 2022	
Program Schedule (Online Mode)	
Time	Day- 3: Friday, 22 <sup>nd</sup> July 2022
10:30 - 11:30	<b>Presentation Schedule</b>
	Paper ID: 095, 096, 097, 098, 099, 106
	For Presentations Join: <a href="http://bit.ly/SmartDSC2022">http://bit.ly/SmartDSC2022</a>
11:30 - 11:45	<b>Break</b>
11:45 - 12:45	<b>Presentation Schedule</b>
	Paper ID: 107, 120, 121, 122, 125, 126
	For Presentations Join: <a href="http://bit.ly/SmartDSC2022">http://bit.ly/SmartDSC2022</a>
12:45 - 13:30	<b>Lunch Break</b>
13:30 - 14:30	<b>Keynote - 7:</b> Divya Midhunchakkaravarthy, Lincoln University College, Faculty of Computer Science and Multimedia, Selangor, Malaysia (Cyber Security Frameworks)
	Join: <a href="http://bit.ly/SmartDSC2022">http://bit.ly/SmartDSC2022</a>
14:30 - 15:30	<b>Keynote - 8:</b> Pelin Angin, Middle East Technical University, Ankara, Turkey. (Smart Security for Containers)
	Join: <a href="http://bit.ly/SmartDSC2022">http://bit.ly/SmartDSC2022</a>
15:30-16:00	<b>Valedictory</b>
	Join: <a href="http://bit.ly/SmartDSC2022">http://bit.ly/SmartDSC2022</a>
<b>Close of Day-3 Schedule</b>	

## Paper Presentations:

Day-3 started with Paper Presentations from 10:30 to 12:45 (IST), Paper Presentations started online and 12 papers were presented in this slot with a 15 mins break. Two External Session Chairs outside the university and Three Internal Session Chairs within the university had evaluated the presentations. All the participants had presented their papers through online as per the schedule given by the organizing team of the conference. Some of the screens of the paper presentations (Slot-1: Paper ID: 095, 096, 097, 098, 099, 106 and Slot-2: Paper ID: 107, 120, 121, 122, 125, 126):

## Break

## Keynote -7:

Computer Science & Engineering

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JULY 20<sup>th</sup>-22<sup>nd</sup> 2022

FIFTH INTERNATIONAL CONFERENCE ON  
SMART TECHNOLOGIES IN DATA SCIENCE  
AND COMMUNICATION  
(SMART DSC-2022)

KEYNOTE SPEAKER

**Dr. Divya Midhunchakkaravarthy**  
Faculty of Computer Science and Multimedia,  
Lincoln University College, Selangor, Malaysia

22<sup>nd</sup> JULY 2022 13:30 to 14:30 (IST)

**Keynote**  
Cyber Security Frameworks

Join: <https://bit.ly/SmartDSC2022>

The post Lunch Session Started with an another keynote lecture delivered by Divya Midhunchakkaravarthy, Lincoln University College, Faculty of Computer Science and Multimedia, Selangor, Malaysia, entitled “Cyber Security Frameworks” from 13:30 to 14:30 (IST)

## Keynote -8:



The slide features a network diagram background. At the top left, logos for KL University and Computer Science & Engineering are displayed. At the top right, the Springer logo and the dates 'JULY 20<sup>th</sup>-22<sup>nd</sup> 2022' are shown. The central text reads 'FIFTH INTERNATIONAL CONFERENCE ON SMART TECHNOLOGIES IN DATA SCIENCE AND COMMUNICATION (SMART DSC-2022)'. Below this, a circular portrait of Dr. Pelin Angin is labeled 'KEYNOTE SPEAKER'. To the right of the portrait, her name 'Dr. Pelin Angin' is listed, followed by her affiliation 'Middle East Technical University, Ankara, Turkey.' and the session details '22<sup>nd</sup> JULY 2022 15:30 to 16:30 (IST)'. The topic 'Keynote Smart Security for Containers' is also mentioned, along with the join link 'Join: <https://bit.ly/SmartDSC2022>'.

The next session continued with another keynote lecture had delivered by Pelin Angin, Middle East Technical University, Ankara, Turkey, entitled “Smart Security for Containers” from 15:30 to 16:30 (IST)

**The Three Day Smart DSC 2022 Conference closed with Indian National Anthem.**

## Conclusion: Fifth SMART DSC 2022 conference

We had 630 participants, 8 keynotes and paper presentations with virtual concept. We received 132 submissions from all over the world. 31 papers were accepted for publications. We are happy to inform that only 23.48% of accepted papers are International Universities and organizations. 31 (out of 31) Papers were presented live by the corresponding authors.

Thanking you,

Sincerely yours,

Philippe Fournier-Viger, Shenzhen University,  
Guangdong, China  
Dr. T. Pavan Kumar  
General Co-Chair, Smart DSC 2022

Debnath Bhattacharyya, KL University,  
Guntur, India  
Editor, Smart DSC 2022

Venkata Naresh Mandhala  
Organizing Secretary, Smart DSC 2022