

# Today and the Future of eProcurement in the Asia and Pacific Region (Korea's Procurement Policy & System)

This is not an ADB material. The views expressed in this document are the views of the author/s and/or their organizations and do not necessarily reflect the views or policies of the Asian Development Bank, or its Board of Governors, or the governments they represent. ADB does not guarantee the accuracy and/or completeness of the material's contents, and accepts no responsibility for any direct or indirect consequence of their use or reliance, whether wholly or partially. Please feel free to contact the authors directly should you have queries.



Public Procurement  
Service

**Bongki SHIN**

Deputy Director for International Cooperation Division  
Public Procurement Service, Korea

# Public Procurement Service



I Public Procurement Service  
Vision for Future

---

II Two Key Best Practices  
at Public Procurement Service

**I**Public Procurement Service (PPS)  
Vision for Future



# 01 PPS Vision for Future



## Support the Economy by Establishing Public Procurement Basics



Make a  
difference



Field-  
oriented



Put into  
action



Prompt

### A Dynamic Procurement Marketplace Full of Vitality A friend to SMEs and venture

- ▶ Stabilize the economy and accelerate economic recovery
- ▶ Create a favorable environment for business with a regulatory reform
- ▶ Create an innovative procurement ecosystem where new industries thrive
- ▶ Go beyond international markets to open new export markets with global procurement

### Public procurement with principles and fundamentals Back to basics

- ▶ Preempt supply chain crises by bolstering raw material stockpiles
- ▶ Establish a fair and transparent procurement order by eliminating unfair procurement practices
- ▶ Manage procurement materials with quality and safety as a priority
- ▶ Secure your procurement platform and successfully launch the next generation KONEPS

### Advancing public procurement infrastructure

- ▶ Build advanced procurement infrastructure in response to structural change

# II Two Key Best Practices at Public Procurement Service



CHAPTER  
II  
1

# Innovation Procurement

- 01 | Innovative Procurement
- 02 | Platform for Innovation : Inno-KONEPS
- 03 | Innovative Products Overseas Testing



# 01 Innovative Procurement

Utilizing Public Purchasing Power to  
Support Technology Innovation and Growth

## Innovative Procurement



(Introduced in) 2019  
(Size of Supply) 273B KRW(200M USD)  
(No. of Products) 1,858

(2023)

## Introduction

- ❖ The government serving as the first buyer of innovative products, driving innovative growth and improving the quality of public services, including technological innovation and greater market access.
- Basis : 「 Government Procurement Act 」 Article 27, 「 Enforcement Decree of the Act On Contracts To Which The State Is A Party 」 Article 26

## Strategy for 2024

- ❖ Maximize business effectiveness by improving the identification, purchase, and after-sales management of innovative products
  - Identify strategic demand areas and products for public convenience, establish a comprehensive plan for pilot purchase of innovative products, and check qualification maintenance
- ❖ Support innovative products' export through overseas demonstration and expansion of ODA projects
  - Significantly expand overseas demonstration projects and link ODA projects with overseas expansion of innovative procurement companies

## 02 Platform for Innovation : Inno-KONEPS



Fixed station-based  
unmanned operation  
system for drones

UV sterilization  
stopper



Chest X-ray medical  
image reading  
assistant solution

### Definition

- ✓ A cross-government, innovative procurement platform that supports every step of the process

### Features and Benefits

- ✓ (Innovative Products Mall) Excellent research and development, innovative prototypes → Open marketplace for free registration and trading
- ✓ (Innovation Demand and Supply Community) Public institutional demand innovation and innovative products → Public service improvement
- ✓ (R&D Demand Survey Integration) Scattered R&D projects by ministries → Provide integrated demand survey window
- ✓ (Supporting the system informatization) New innovation procurement Convenient and fast online access

### Achievements

- ✓ Significant increase in the number of annual users (160,000 in '22 → 1.2 million in '23)
- ✓ 1,858 innovative products registered and 273B KRW(200M USD) in cumulative pilot purchases



## 03 Innovative Products Overseas Testing

### Overview

- ✔ **Provide an opportunity to test Innovative Products for Performance and Market Viability in International Markets**
  - ▶ Initiative to purchase products inventive but previously unavailable
  
- ✔ **Collaborative efforts** with organizations having international networks to **drive international validation of the Innovative Products**
  - ▶ KOTRA, KOICA, and Korea's public power generation companies
    - ◇ KOTRA: Korea Trade Investment Promotion Agency
    - ◇ KOICA: Korea International Cooperation Agency



## 03 Innovative Products Overseas Testing

### Achievements

- ✔ Since 2021, **Overseas Testing projects** with three **Power Generators** expanded through collaborations with various institutions - KOTRA, KOICA & ETRI
  - ◇ ETRI: Electronics and Telecommunications Research Institute
  - 13 Innovative Products worth USD 340,000 tested at power plants in Indonesia, Chile and Jordan
  - Since 2021, USD 580,000 purchased in connection with KOTRA program
  - Blood collection devices in hospitals of five nations including Tanzania in 2021
  - Urine analyzers in eight nations in 2023

# CHAPTER II - 2

## Next-gen KONEPS

- 01 | Next-generation KONEPS
- 02 | Ai & Big Data : Public Procurement Demand Forecasting
- 03 | Customized Notice Recommendation for Suppliers
- 04 | Product Recommendation in the Online Shopping Mall
- 05 | AI Image processing : product classification code recommendation
- 06 | Cloud : Transition to the infrastructure with a cloud platform
- 07 | Bid Congestion Prediction



# 01 Next-generation KONEPS



KONEPS opened in 2002 / A project to completely rebuild the outdated system based on new digital technology and integrate the self-procurement system of public institutions

Business size: 100B KRW, 74.1 USD

The project started in July 2021. Next-gen KONEPS is scheduled to launch in the second half of 2024. Analysis, design, and development have been completed, and testing is underway.



## Main Goals

- ① Redesigning KONEPS with user-centered infrastructure technology
- ② Implementing new digital technologies
- ③ Integrating respective e-procurement systems

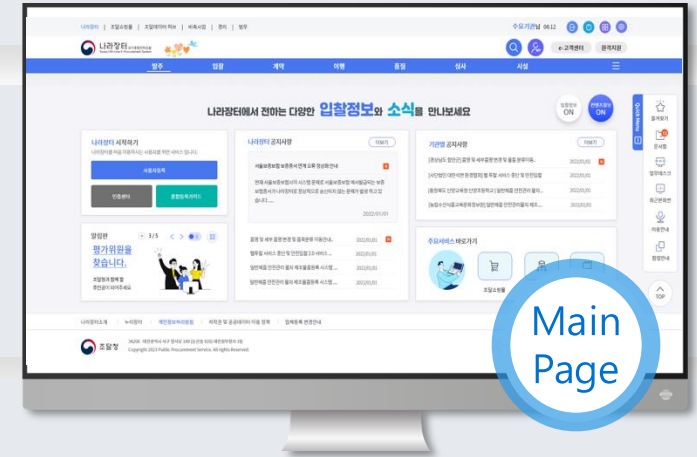


## Features

**(User-oriented)** Redesign the outdated infrastructure to make KONEPS accessible to all users and improve operational reliability

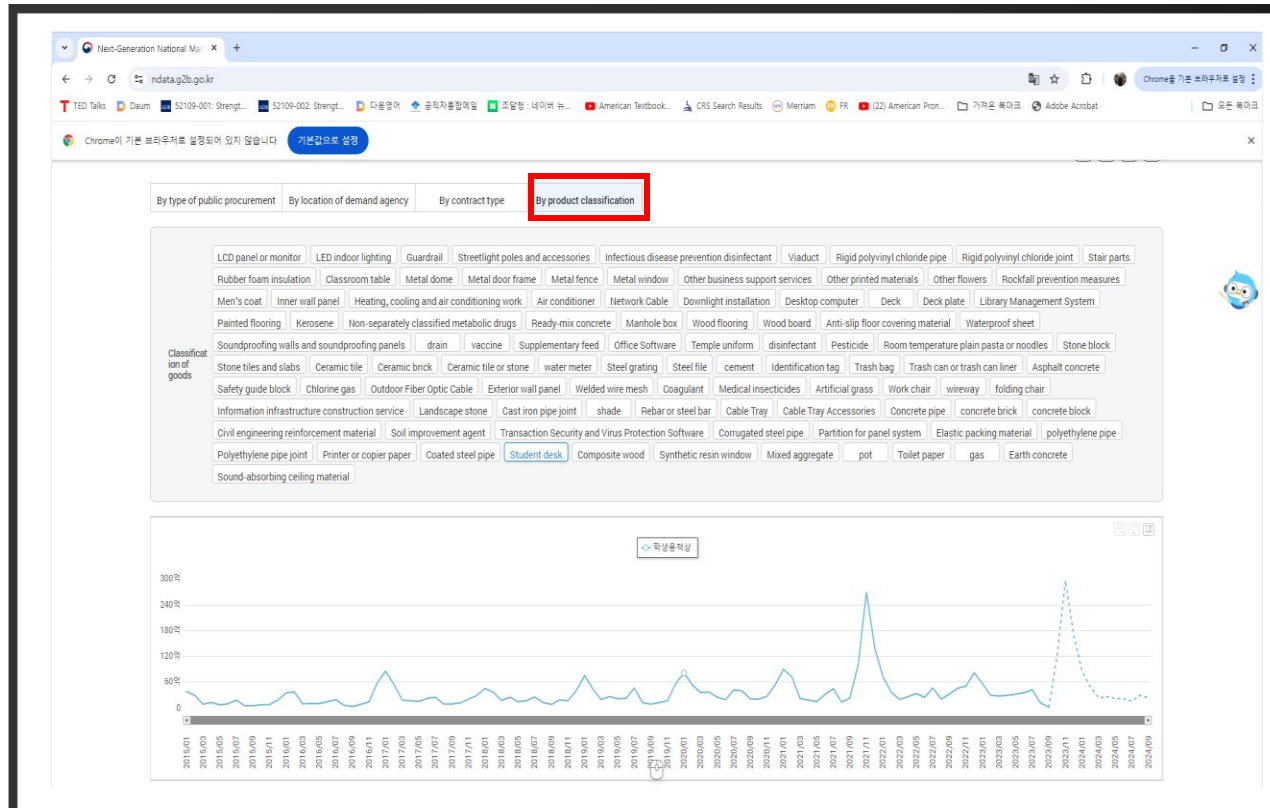
**(Adopting the latest intelligent information tech)** Provide more innovative services by proactively applying the latest ICT in response to the 4th industrial revolution

**(Integration of e-procurement system)** Integrate each agency's e-procurement system into KONEPS to unify the e-procurement window



## 02 Ai & Big Data : Public Procurement Demand Forecasting

☝ This feature makes suppliers predict demand and provide relevant information so that they can use this data for their business planning.



The demand forecasting with Public procurement types, contract types, demand agencies location, and item classifications

### Key features

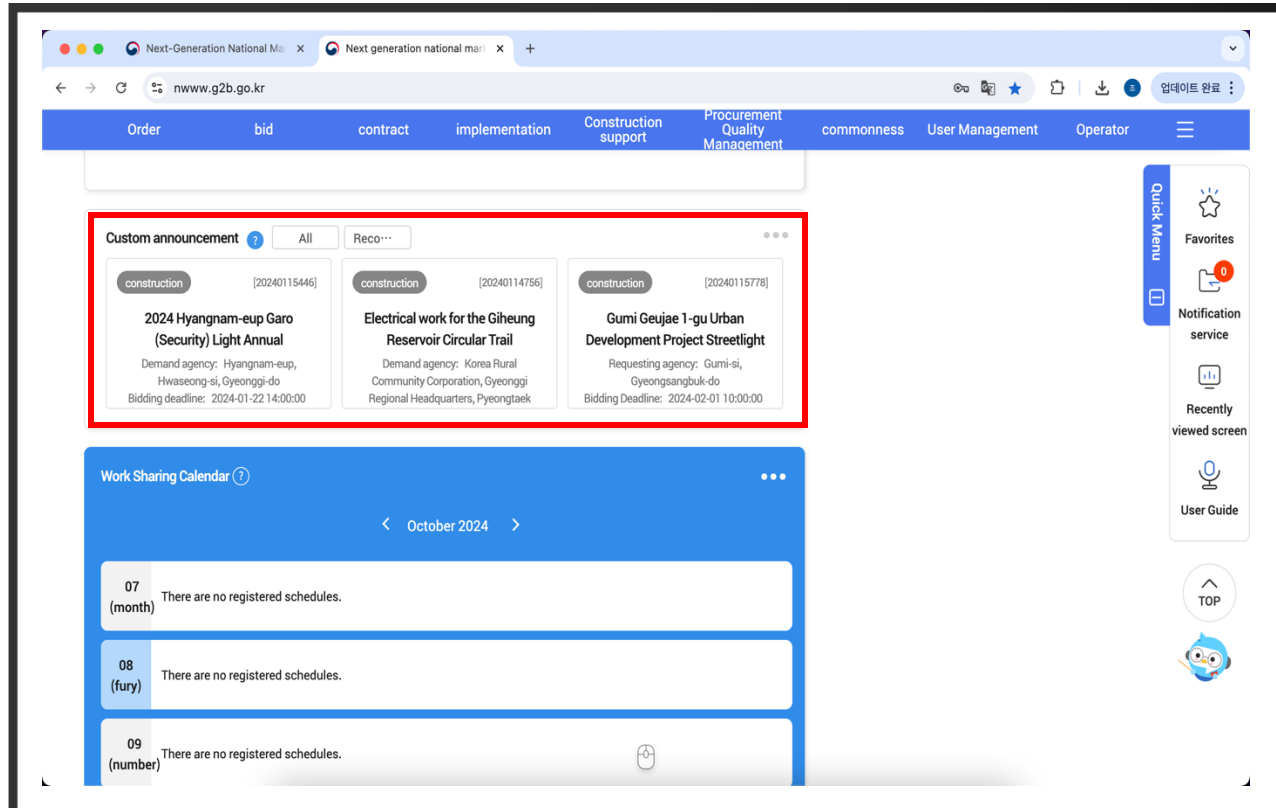
- 1 Predicts the volume of orders
  - procurement demand by PPS and agencies etc.

- 2 Provides forecasted demand information
  - order type, business category, location of client agencies, item classification, etc.
  - PPS analyzed data from the past seven years(July 2015 to July 2021) and will provide this service upon launch

- 3 Expected Benefits
  - Supports suppliers in establishing business plans, such as production planning
  - Assists the PPS and agencies with order planning based on demand forecasts

# 03 Customized Notice Recommendation for Suppliers

☰ A powerful tool for creating a more inclusive and efficient public procurement environment for smaller businesses and market entrants



It will expand supplier's opportunities for them to advance into the public procurement market.

## Key features

### Service Overview

1. This service recommends relevant notifications to suppliers based on data such as company information, bidding history, and qualification details, etc.
2. PPS analyzed data from the past three years (July 2021 to July 2023) and will provide this service upon launch

### Expected Benefits

1. Expands opportunities for public procurement participation for SMEs or corporate newcomers to the procurement market, which may find it harder to access information
2. Improves competitiveness and efficiency in the procurement market by providing notice information to more suppliers

# 04 Product Recommendation in the Online Shopping Mall

## Convenience for Government, Opportunity for Business

Customized recommendation based on purchase history | Search-based recommendation

Product ID	Star Rating	Product Name	Description	Price
22901147	0 (0)	Bookcase (5610150701)	bookshelf, faith furniture, s080, 800×420×1950 mm	950,000
23533619	0 (0)	Air circulator (4010160201)	Air circulator, Jeongmin, PHES-500E-JM, 500m <sup>3</sup> /h, duct...	501,000
20564884	0 (0)	Folding chair (5610154201)	Foldable chair, SeaWorld, CF501G, 520×485×925 mm, f...	29,500
23327841	0 (0)	Men's Overcoat (5310180201)	Men's outerwear, Mido C&T, MID00055, for police winter...	72,000

Lower barriers for new suppliers to enter the procurement market while enhancing efficiency and convenience for Government entities

### Key features

#### Service Overview

- 1 Recommended products in the Online Shopping Mall by analyzing basic user information such as their past purchase history, classification, etc.
- Based on the purchase history for the past three years, products are recommended using the 'Matrix Factorization' AI algorithm

#### Expected Benefits

- 2 (For business) Assists SMEs and start-ups, which may have relatively lower marketing capabilities, in finding new sales channels in the public procurement market
- (For government) Provides customized product recommendations to conveniently purchase items without searching for their preferred products

# 05 AI Image processing : product classification code recommendation

## Product Classification Code Recommendation Application

Image files cannot exceed 10MB. Only JPG images can be uploaded.

1 Select Image Gogo.jpg Image Upload

2 Image Analysis Restricted Category Analysis

2 analysis method

10 furniture

- 1010 office furniture
  - 101015 Chais
    - 10101502 Desk Chairs
    - 10101504 Children's desk chairs**
    - 10101512
  - 101016 Sofas

3 similar image search

Similar Product Images  
If you don't have the image you want, search again for category only

Gaming Chairs 9912391301 80.11%	Desk Chairs 9912391301 82.31%	Desk chairs 9912391301 83.14%	<b>Children's desk chairs</b> <b>9912391301</b> 85.11%

Result

Search for government commodity through product images, even if you don't know codes or names

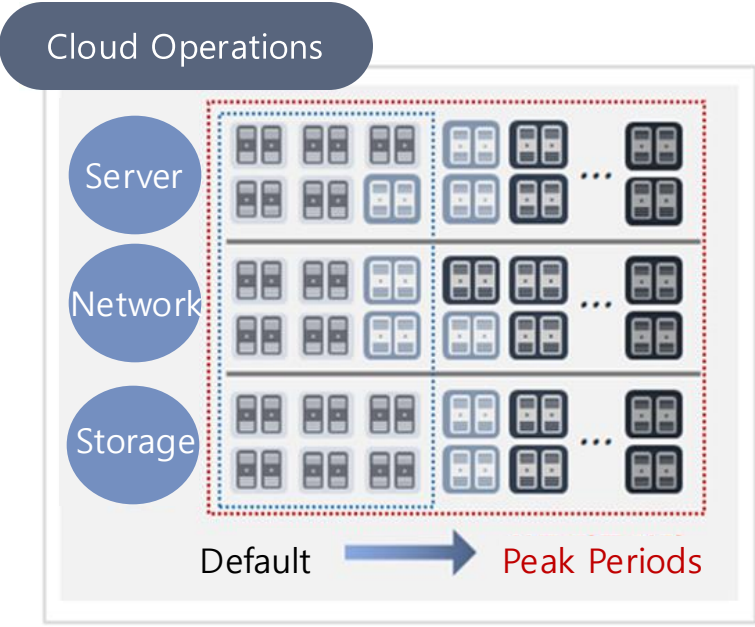
### Key features

- 1 Enter an image
  - Enter an image of an unknown product classification code
- 2 Choose Analysis Method
  - Image Analysis
    - simple image analysis
  - Restricted Category Analysis
    - After entering an image, the user selects a classification system
    - increase classification accuracy
- 3 Product classification code analysis & results
  - Presenting product classification codes for images similar to input images

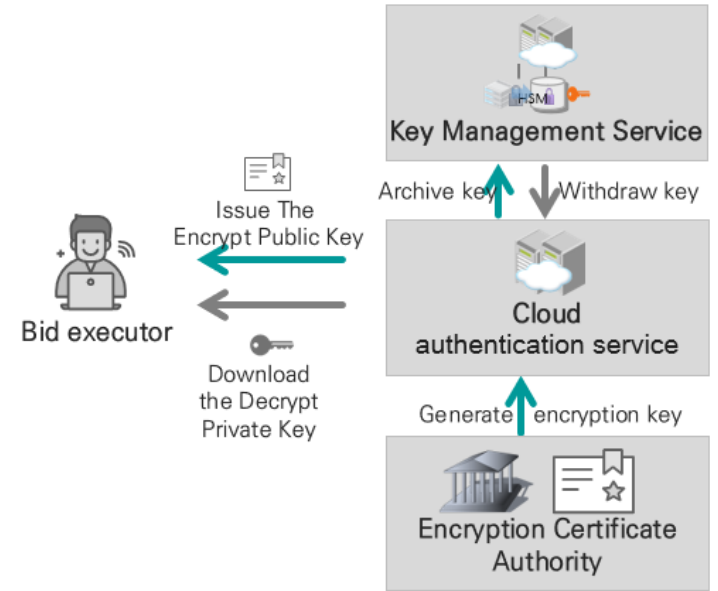


# 06 Cloud : Transition to the infrastructure with a cloud platform

## 1 Ensure service continuity with flexible resource scaling



## 2 Cloud-based encryption key management



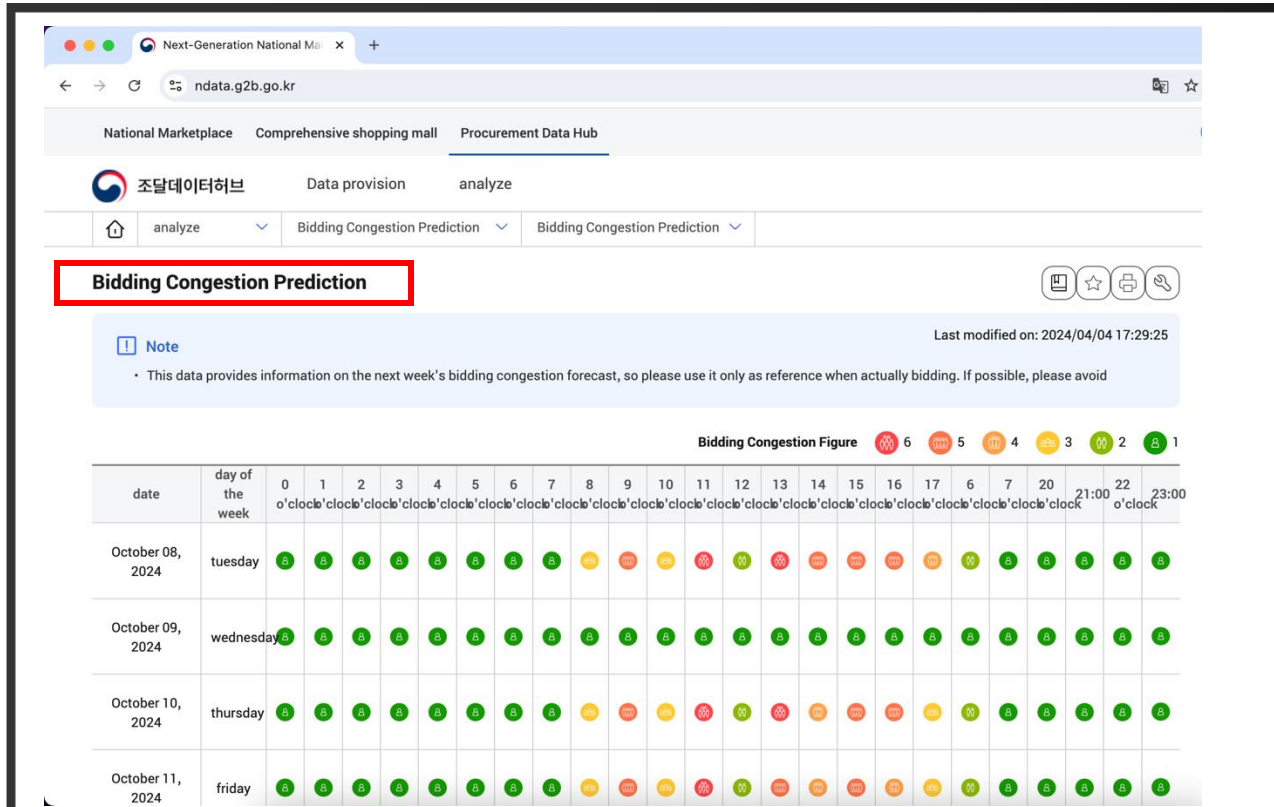
## Key features

- Due to bid closing, contract signing, and payment, usage is concentrated in peak periods such as pre- / post-holidays and year-end.  
→ Rapid ramp-up is difficult with fixed resources, so turn to the cloud for rapid resource allocation
- Eliminate the risk of lost or compromised bid encryption keys by storing them in the cloud rather than on PC  
→ Increased security as it is safe from hacking

Ensure service continuity with cloud-based infrastructure configurations that allow for flexible resource scaling  
Increase operational efficiency and security with cloud-based bid encryption key management

# 07 Bid Congestion Prediction

💬 This feature helps avoid peak traffic times



Bid Congestion Prediction feature ensures a smoother and more reliable bidding experience

## Key features

### Service Overview

- 1 Shows the congestion levels of the KONEPS system by date and time in a traffic light format
- 2 PPS analyzed data from the past nine years (July 2016 to July 2024) and will provide this service upon launch

### Expected Benefits

- 1 Allows suppliers to avoid peak traffic times on the Next-generation KONEPS, ensuring stable bidding opportunities
- 2 Helps the Public Procurement Service maintain system stability by utilizing congestion information

**Thank you**

**Q&A**

