SMART 3

How to Identify Valuable Patents

A System to Measure, Analyze and Rate Patent Technology

http://smart.kipa.org

Korean Intellectual Property Office
KIPA

FIND OUT WHAT IT'S WORTH, SMART 3

A System to Measure, Analyze and Rate Patent Technology

SMART3 is an online patent evaluation system to construct and analyze patent portfolios through objective and quantitative patent data.

SMART 3 GIVES YOU INSIGHT

1 How to **Manage Countless Patents** Effectively

"Countless Patents, Quick Selection!"

This service helps university, public research institution and corporation make quick, effective and smart decision over countless patents to determine a patents' profit potential.

2 How to **Cut Down** Patent Management **Expenses**

"Sort Out Potential Patents!"

Sort out potential patents by real-time evaluation system, SMART3. Save the time and money for your patent management.

3 How to **Establish a Differentiation Strategy** for Your Patents

"Know the Place of Your Competitors and Yourself in the field!"

Know which company is a main player in your technology field and where you stand. Understand how you're doing relative to your counterparts.

A Reliable SMART3 Evaluation Model

Through the iterative process, an evaluation model using statistical techniques has been established through verification and validation.

SMART 3 Model

Evaluation Index

- Identifying and scoring patent indicators for patent evaluation
  - Evaluation Indicators : Strength of Patent Rights, Quality of Technology, Usability

Strength of Patent Rights	Quality of Technology	Usability
The degree to which you can maintain exclusive status in a patent dispute with a third party	To match or lead technology trends	The degree and availability of business
35%	35%	30%

Evaluation Factors

- Determine assessment elements using factual information that can be extracted for patent evaluation
  - Evaluation Factor condition : Objectivity, Quantitativeness and Completeness

Objectivity	Quantitativeness	Completeness
A completely independent nature from personal supervision	Quantify statistical observations, including mathematical meanings	The information that any patents eligible for evaluation

- Evaluation Factors (US - 29)

NO	Evaluation Factor	NO	Evaluation Factor
1	US patent growth rate under the CPC level	16	Nth year after the date of grant
2	Interference	17	Priority examination request
3	IPC	18	Backward citations (thesis)
4	RCE	19	Average age of citations
5	Reexamination	20	Information provision
6	Reissue	21	Grant of patent term extension
7	IPR, PGR in pending	22	The average depth of the dependent claims
8	Continuing application	23	Type of claim
9	Change in ownership	24	forward citations
10	The number of drawing sheets	25	Standard essential patent
11	The length of independent claims	26	Filing date difference in forward citation
12	The number of independent claims	27	Forward citations (thesis)
13	Detailed description of the invention	28	Concluded reexamination proceedings
14	The number of inventors	29	patent family information (States)
15	Legal proceeding		

- Evaluation Factors (EU - 25)

NO	Evaluation Factor	NO	Evaluation Factor
1	Europe patent growth rate under the CPC level	14	Annual registration
2	First entering EP countries	15	Objection
3	IPC	16	The number of thesis in citation
4	Citation with X reference	17	Average age of citations
5	Right limitation procedure	18	The number of dependent claims
6	Difference between date of right limitation and issue	19	Average depth of the dependent claims
7	Ownership change	20	Forward citation
8	The number of drawings	21	Total number of claims in application
9	The length of independent claims	22	Filing date difference in forward citation
10	The number of independent claims	23	Thesis cited in forward citation
11	The number of inventors	24	The number of overseas family countries
12	Divisional application	25	Current remaining EP countries
13	Licensee		

Evaluation Models

- **US/EU SMART3 Models applied Multiple Regression Analysis**
  - When analyzing relationships between one dependent and multiple independent variables, multiple regression checks for the following models when there are K independent variables.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 \cdots + \beta_K X_K + \varepsilon$$

(Y : dependent variable, X : independent variable, β : coefficient of independent variable, ε : error)

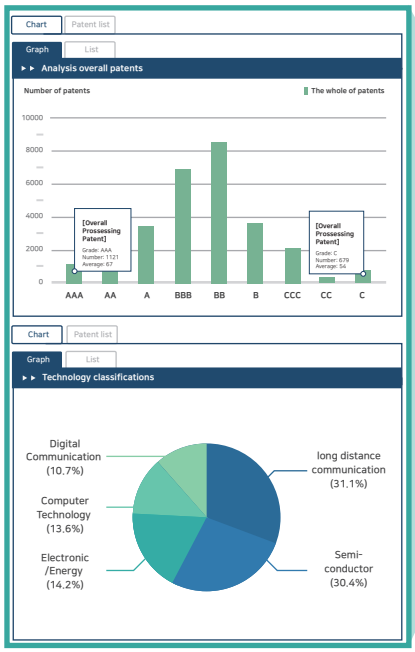
- Multiple regression models use X and Y sets given in the study to produce an optimal β set and ε, which are used to generate the independent variables X, given in the actual evaluation.

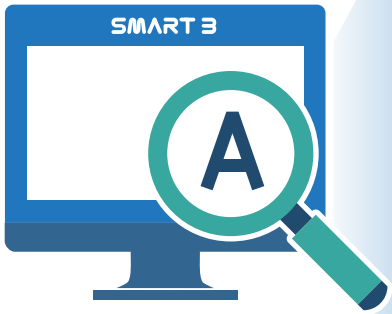
SMART Solution For Anyone to Evaluate Patent

Patent evaluation results and key information are provided
as a report for quick and easy decision making and various uses.

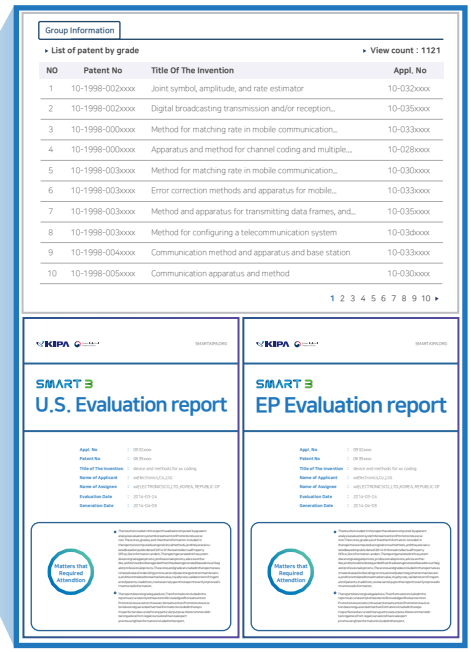
SMART 3 Patent Grade Evaluation System

Analysis of Overall Patents & Technology Classifications





List of Patent by evaluation grade & Evaluation Report (US/EU)



SMART 3 Evaluation Report

KIPA SMART 3

Title of The Invention : method and apparatus for transmitting/receiving packet data using pre-defined length indicator...
Appl.No : 10 - 2005 - xxxxxxx Patent.No : 10 - 0913xxxx
Evaluation Model : electric/electronic/IT

Evaluation Summary

• Title of the invention	method and apparatus for transmitting...
• Appl.No.	10 - 2005 - xxxxxxx
• Patent.No.	10 - 0913xxxx
• Filing Date /Patent Data	2005.05.04 / 2009.08.18
• Evaluation Date / Create Date	2025.05.24
• Applicant	xx Electronics, Co., Ltd.
• Assignee	xx ELECTRONICS CO., LTD., KOREA, REPUBLIC OF
• Inventor	Hong, x xx xx xx, x xxxxx xxx x
• International Patent Classification Code	H04W 28/06
• International Patent Classification Name	Time-division multiplex systems(H04J 14/00 takes precedence)(relaysys..

Grade
AAA

• Abstract

A method and apparatus for enabling efficient use of radio resources by reducing an RLC PDU size in a mobile communication system supporting voice service over a packet network are provided. An RLC layer constructs an RLC PDU without inserting information indicating the start and end of an SDU or indicating the use or non-use of padding. The RLC layer sets an LI in a header to indicate inclusion of an intermediate SDU segment in the data field of the RLC PDU. Therefore, the resulting decrease of overhead arising from packet transmission facilitates the efficient use of limited radio resources.

• Representative Claim

1. A method of transmitting data in a mobile communication system, comprising: receiving a service data unit (SDU) from a higher layer and determining whether the SDU can be comprised in one protocol data unit (PDU); if the SDU is not comprised in one PDU, segmenting the SDU into a plurality of segments according to a transmittable PDU size, and constructing one or more PDUs, each PDU comprising a header and a data field, wherein the data field comprises a segment of the SDU, wherein the header comprises a serial number (SN) field, a one-bit field indicating that the PDU does not contain an entire SDU in the data field and at least one Length Indicator (LI) field, wherein if the data field of the PDU contains an intermediate segment of the SDU, the LI field in the PDU contains the intermediate segment of the SDU is set to a predefined value indicating that the PDU contains neither a first segment nor a last segment of the SDU; and sending the PDUs to a receiver.

• WHAT IS THIS REPORT?

The SMART3 report provides online, real-time analysis and evaluation results of registered patents.

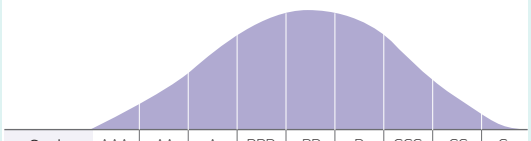
• WHO IS THIS REPORT FOR?

SMART3 report is primarily for R&D and IP departments at diverse companies, such as

- National Research institution
- Patent & Law Firm
- Investment Company
- Consulting Company
- Credit Guarantee Fund
- The University
- Corporation

• SMART3 Rating Standard

Applied Stanine Scale for 9 Grade



Grade	AAA	AA	A	BBB	BB	B	CCC	CC	C
Percentage	4%	7%	12%	17%	20%	17%	12%	7%	4%
Accumulation Rate	4%	11%	23%	40%	60%	77%	89%	96%	100%

SMART3 Evaluation Result and Info With A Patent Number

Based on the US and EU Patent DB, the evaluation result is provided in 9 Grades through a relative evaluation according to the WIPO Classification.

SMART 3 Report Sample

- **Overall Evaluation Analysis**
  - Grade of Evaluation Items
  - Total Grade
  - Evaluation Analysis in the WIPO technical group
  - CPC Evaluation Analysis
- **Review opinion**
  - Evaluation Grade and detail explanation

- **Evaluation Result by Index**
  - Analysis of each Evaluation Index

KIPA SMART 3

Title of The Invention : device and methods for ****** ****** and rate matching in a communication system
Appl. No : 0932**** Patent No : 0639****
Evaluation Model : electric/electronic/IT

Overall Evaluation Analysis

WIPO Technical Classification Evaluation Analysis

Evaluation Items	Grade	Physics/material (390,017)	chemistry (82,440)	surface technique/coating (54,589)
Strength of Patent Rights(35)	AAA	2.6	2.7	5.5
Quality of Technology (35)	AAA	0.5	0.5	0.6
Usability (30)	AAA	3.5	3.6	4.8
Total (100)	AAA	0.5	0.5	0.8

The same application year evaluation analysis in the WIPO technical group

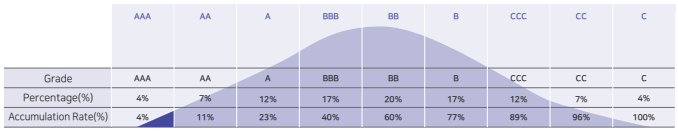
Evaluation Items	Physics/material (390,017)	chemistry (82,440)	surface technique/coating (54,589)
Strength of Patent Rights	3.6	2.7	5.5
Quality of Technology	1.0	0.5	0.6
Usability	3.5	3.6	4.8
Total	0.8	0.5	0.8

CPC Evaluation Analysis

Evaluation Items	H [352,319]	H04 [339,192]	H04L [20,741]
Strength of Patent Rights	3.0	5.1	5.5
Quality of Technology	0.5	0.5	0.6
Usability	3.7	4.6	0.8
Total	0.5	0.8	0.9

Review Opinion

The overall evaluation score of the patent ranked in the top 1.6%, which is in AAA Grade. In detail, the score in the Strength of Patent Right ranked in the top 4% that is in AAA Grade, the score in the Quality of Technology ranked in the top 2.8% that is in AAA Grade, and the score in the Usability ranked in the top 2.9% that is in the AAA Grade. In particular, The number of forward citations is 88 and it has been cited in later-filed patent applications.



Grade	AAA	AA	A	BBB	BB	B	CCC	CC	C
Percentage(%)	4%	7%	12%	17%	20%	17%	12%	7%	4%
Accumulation Rate(%)	4%	11%	23%	40%	60%	77%	89%	96%	100%

※ Score-based grades are assigned based on the percentage of all registered patents according to the above grade distribution table.

KIPA SMART 3

Title of The Invention : device and methods for ****** ****** and rate matching in a communication system
Appl. No : 0932**** Patent No : 0639****
Evaluation Model : electric/electronic/IT

Evaluation Result by Index

Strength of Patent Rights [AAA]

The evaluation score in the Strength of Patent Right is "29.1" and Grade "AAA" is assigned to it. The patent is evaluated highly as the evaluation scores are 16 in "Broadness/Narrowness of Patent Scope" and 16.7 in "Well-supported Right". The patent has a large number of claims (38 claims) and it has secured right on various views of technologies.

Quality of Technology [AAA]

The evaluation score in the Quality of Technology is "17" and Grade "AAA" is assigned to it. The evaluation scores are 3.9 in "Technical Trend Conformity" and 4.3 in "Technical Leadership", which are comparatively high. It includes variable technical viewpoints as the number of IPC is 5. The patent has 88 forward citations in later-filed patent applications.

Usability [AAA]

The evaluation score in the Usability is "31.6" and Grade "AAA" is assigned to it. The evaluation scores are 15.1 in "Commercialization Opportunities" and 16.5 in "Enforcement Opportunities", which are comparatively high.

Evaluation Factors

no	Evaluation factor	Score	no	Evaluation factor	Score
1	US patent growth rate under the CPC level	-0.75	16	Nth year after the date of grant	5
2	Interference	0	17	Priority examination request	0
3	IPC	1	18	Backward citations (thesis)	54
4	RCE	0	19	Average age of citations	18.601
5	Reexamination	0	20	Information provision	0
6	Reissue	0	21	Grant of patent term extension	0
7	IPR, PGR in pending	0	22	The average depth of the dependent claims	2.14
8	Continuing application	5	23	Type of claim	1
9	Change in ownership	0	24	Forward citations	1
10	The number of drawing sheets	32	25	Standard essential patent	0
11	The length of independent claims	33	26	Filing date difference in forward citation	2,168
12	The number of independent claims	3	27	Forward citations (thesis)	16
13	Detailed description of the invention	22,323	28	Concluded reexamination proceedings	0
14	The number of inventors	10	29	Patent family information (states)	3
15	Legal proceeding	0			

- **Main Patent Information**
  - Ownership Change Information
  - Related litigation
  - Family Information
  - Forward Citation Information

- **Evaluation Factor**
  - Information of Evaluation factor Score

Ownership Change Information

No	Owner	Date of change
1	******* ELECTRONICS CO., LTD., KOREA, REPUBLIC OF	2009.08.**

Related litigation

No	Content	Date
1	******* Electronics Co., Ltd et al v. Apple, Inc, Filed April **, 2011, D.C. N.D. California, Doc, No.5:11cv2079	2011.04.**
2	******* Electronics Co., Ltd et al v. Apple, Inc, Filed April **, 2011, D.C. N.D. California, Doc, No.3:11cv2079	2011.04.**

Family Information

No	Family patent number	Filing date	Country	Family type
1	KR20060115****	2005.05.04	Republic of Korea	Foreign Family
2	KR1009139****	2005.05.04	Republic of Korea	Foreign Family
3	PT17203****	2006.05.04	Portugal	Foreign Family
4	EP17203****	2006.05.04	European Patent Office (EPO)	Foreign Family
5	DK17203****	2006.05.04	Denmark	Foreign Family
6	SIEP17203****	2006.05.04	Slovenia	Foreign Family
7	S117203****	2006.05.04	Slovenia	Foreign Family
8	WO2006118*****	2006.05.04	World Intellectual Property Organization (WIPO)(International Bureau of)	Foreign Family
9	AT546****	2006.05.04	Austria	Foreign Family

Forward Citation Information

No	Patent No	Country	Title Of The Invention	Filing date	Applicant	Assignee
1	US98383***	U.S.	**** communication..	2017.07.07	FUxxxxx LIMITED	FUxxxxx LIMITED
2	US98879***	U.S.	******communication sys..	2015.02.10	KONINKLIJKE xxxxx N.V.	KONINKLIJKE xxxxx N.V.
3	US94197***	U.S.	Radio communication ***..	2013.06.24	FUxxxxx LIMITED	FUxxxxx LIMITED
4	US90554***	U.S.	Determinative ********..	2013.03.11	xxxxCOMM	xxxxCOMM
5	US98861***	U.S.	Constrained ***** naviga..	2012.12.31	FACExxxx INC.	FACExxxx INC.
6	US96260***	U.S.	Display ..	2012.12.31	FACExxxx INC.	FACExxxx INC.
7	US97536***	U.S.	Animated display ****..	2012.12.31	FACExxxxINC.	FACExxxxINC.
8	US98518***	U.S.	Constraing display in ..	2012.12.28	FACExxxx INC.	FACExxxx INC.
9	US93609***	U.S.	Display..	2012.12.28	FACExxxx INC.	FACExxxx INC.
10	US85092***	U.S.	Radio ********** ..	2012.05.08	FUxxxxx LIMITED	FUxxxxx LIMITED
11	US81997***	U.S.	Radio ********** ..	2011.06.29	FUxxxxx LIMITED	FUxxxxx LIMITED
12	US96786***	U.S.	Constraining display ..	2010.12.08	LUIxx xxxx	LUIxx xxxx
13	US87808***	U.S.	Method for *******..	2010.04.14	xx ELECTRONICS.INC.	xx ELECTRONICS.INC.
14	US88243***	U.S.	Transmitting ******, trans..	2010.01.22	xxxxxBISHI ELECTRIC	xxxxxBISHI ELECTRIC

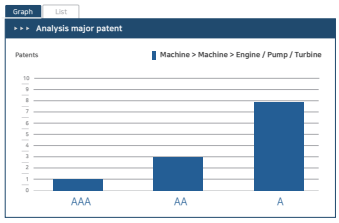
SMART3 Makes Your Business SMART

Establish a differentiated IP management strategy by finding outstanding patents in key technology fields and analyzing competitiveness of companies.

How SMART 3 Can Help

Major Patent

Are the **core value** and **major patent** consistent?

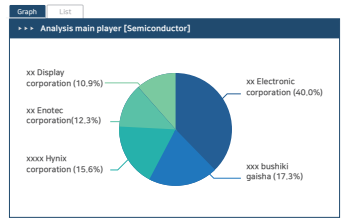


Identify gaps in the company's key technology fields and major patents, and establish strategies to realize core values.

This basic comprehensive analysis identifies patent management directions and continuously improves the patent portfolio.

Main Player

Who is the **main player** in your technology field?

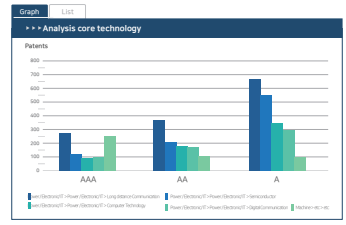


"If you know your counterpart and yourself, you can win every battle."

Identify and analyze market trends and leading companies in major technology fields in order to improve competitiveness.

Core Technology

Where does your **technology start**?

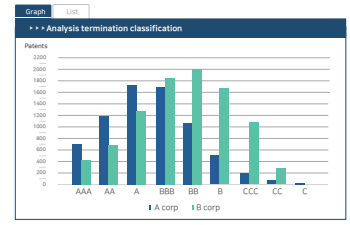


Identify what precedes your core technology and decide on a direction for new technology development more efficiently.

Also, you can save resources by identifying companies that can pose a threat to you and establishing strategies to respond to them.

Differentiation Strategy

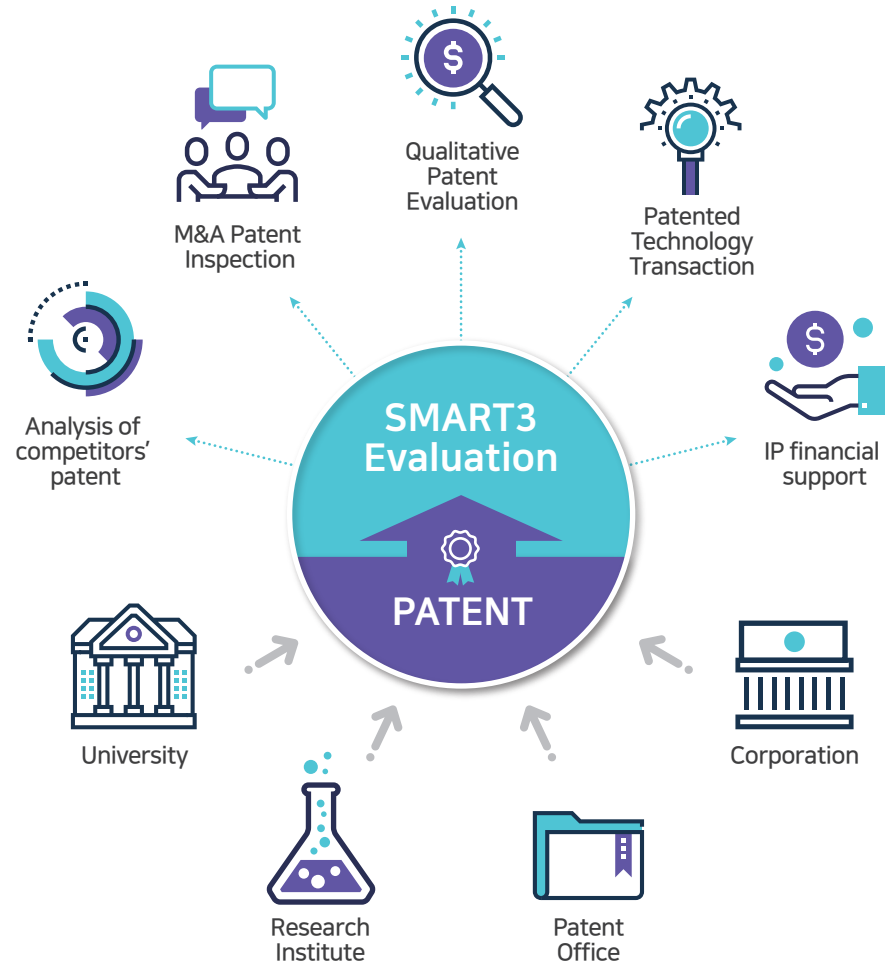
What is your **competitive advantage**?



As today's competition continues to rise, fierce patent wars can result due to new technologies or business models.

A patent strategy can be an important tool to secure an independent competitive advantage.

SMART 3 Patent Grade Evaluation System



You can make faster decisions on outstanding patents, receive qualitative patent evaluations, obtain IP financial support, secure patented technology transactions, and receive corporate consultation.

With SMART3, you can identify differentiated IP management strategies, while analyzing competitors' core technology.

SMART 3 helps you make SMART transformation for your business.

KIPA PLAYS A LEADING ROLE IN GLOBAL IP RIGHTS.

KOREA INVENTION PROMOTION ASSOCIATION

KIPA is Korea's largest public organization specialized in intellectual property and equipped with efficient systems, 200 IP professionals, and a budget of over 72 million USD. Korea has taken a global role of leading IP inventions.
KIPA's rating technology and innovative IP trading has now become a world-class pioneer.

KIPA'S CORE SERVICES

Promotion international competitiveness and economic development through technological innovation in the industrial field by systematically and efficiently implementing invention promotion projects

IP BUSINESS SUPPORT

Fostering global companies through the commercialization of IP

IP HRD

Nurturing IP specialist and providing training in IP HRD

IP CULTURE

Cultivating a culture where IP is respected

BRIEF HISTORY

- **2001** Designated a specialized technology rating organization by the government
- **2002** Designated a specialized technology transaction organization by the government
- **2002** Hosted the first Seoul International Invention Fair (SIIF)
- **2006** Korea-WIPO joint intellectual property rights education content launched
- **2010** System to Measure, Analyze and Rate Patent Technology 3 (SMART3) for Korean patents launched
- **2013** SMART3 service for U.S. patents launched
- **2016** SMART3 service for European patents launched

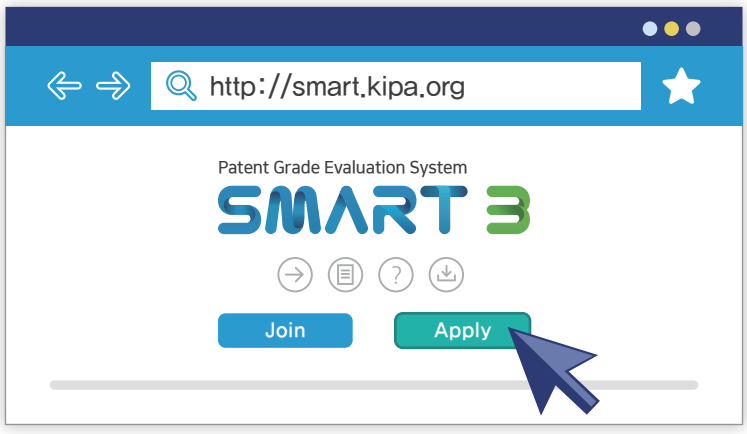
The Reputable
Patent Grade Evaluation System

SMART 3

QUALITY
DATA

SPEED +
ACCURACY

RELIABILITY



http://smart.kipa.org / smart@kipa.org / 02.3459.2805

Korean Intellectual Property Office
KIPA