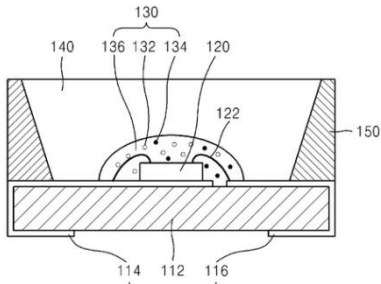


REPORT  
SAMPLE

# Phosphors & QDs for LED Application

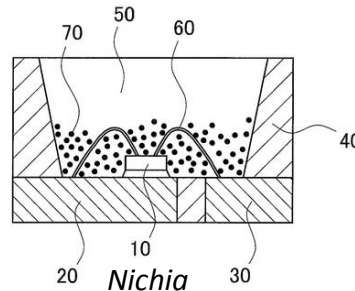
## Patent Landscape 2016



Samsung Electronics



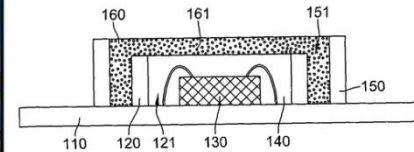
Philips Lumileds



Nichia



QD-LCD



Intematix



2405 route des Dolines, 06902 Sophia Antipolis, France  
Tel: +33 489 89 16 20  
Web: <http://www.knowmade.com>



75 cours Emile Zola, F-69001 Lyon-Villeurbanne, France  
Tel : +33 472 83 01 80 - Fax : +33 472 83 01 83  
Web: <http://www.yole.fr>

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Knowmade Company presentation

Contacts

# INTRODUCTION

## Scope of the Report



This report provides a detailed picture of the patent landscape for LED downconverters, namely Phosphors & Quantum Dots (QD).

This report covers patents published worldwide up to September 2015. More than 7,510 patent families relevant to the scope of this report have been selected.

### *Included in the study*

- Any patent describing a component or a device using a blue LED in conjunction with a downconverter (phosphor or quantum dots) to produce light at a different wavelength than the blue LED pump.
- Patents specifically mentioning the composition of one or more compositions of phosphors or quantum dots used in conjunction with an LED.

### *Not included in the study*

- Phosphor deposition equipment.
- Patents with Phosphors or quantum dots used for non LED applications or in which LED applications are not mentioned.

# INTRODUCTION

## Key Features of the Report (1/2)



- **The report provides essential patent data for Phosphors & QDs IP.**
- **It identifies more than 30 major holders of Phosphors & QDs related intellectual property. It provides in-depth IP analysis and industrial key players including:**
  - IP trends including time evolution and countries of filing
  - What's new compared to the 2013 Edition
  - Ranking of main patent applicants
  - Joint developments and IP collaboration network of main patent applicants
  - Key patents and fundamental granted patents near expiration
  - Relative strength of main companies' IP portfolios
  - Matrix showing patent applicants and patented technologies
  - Segmentation of patents:
    - by technology including LEDs, Phosphor Compositions, QDs and Remote phosphors
    - by phosphor compositions: Garnets, Silicates, Nitrides, New Compositions
  - Deep IP analysis of new trend compositions and QDs
  - Complete review and deep analysis of litigations and licensing landscape (50+ slides)
  - Analysis of IP publication of Chinese players
- **It includes Phosphor & QDs LED market data and forecasts.**

# INTRODUCTION

## Key Features of the Report (2/2)



- The report also provides an extensive Excel database with all patents analyzed in the report (18,000+ patents).
- This database allows multi-criteria searches:
  - Patent information
    - Patent publication number
    - Hyperlinks to the original documents
    - Priority date
    - Title
    - Abstract
    - Patent Assignees
    - Segmentation
    - Legal status for each member of the patent family
- **This report does not provide** any insight analyses or counsel regarding legal aspects or the validity of any individual patent: KnowMade is research firm that provide market and technical analysis and opinions. The research, technical analysis and/or work contained herein is not a legal opinion and should not be construed as such.

# INTRODUCTION

## Objectives of the Report

---

### Objectives of this patent landscape is to:

- ✓ Understand the IP landscape for Phosphors & QDs.
- ✓ Identify key patents.
- ✓ Understand trends in Phosphors & QDs IP.
- ✓ Identify the major IP players in Phosphors & QDs and the relative strength of their patent portfolio.
- ✓ Identify new IP players in Phosphors & QDs.
- ✓ Identify IP collaboration networks between key players.
- ✓ Identify main patent litigations.

# INTRODUCTION

## Methodology (1/2)



- The data was extracted from the FamPat worldwide database (Questel-ORBIT) which provides 80+ million patent documents from 95 offices.
- The search for patent was performed in September 2015 hence patents published after this date will not be available in this deliverable.
- The selection of the patents has been done both automatically and manually (all details in next slides).

Number of selected patent families for the Phosphors & QDs IP Investigation:  
7,513 over a number of returned results > 20,000

- The statistical analysis was performed with INTELLIXIR System.
- The patents were categorized using keyword analysis of patent title, abstract and claims, in conjunction with expert review of the subject-matter of inventions (all details in next slides).
- The patents were grouped according FamPat's family rules (variation of EPO strict family): A *Patent Family* comprises patents linked by exactly same priority numbers (strict family), plus comparison of priority and application numbers, specific rules by country and information gathered from other sources (national files, legal status ...).

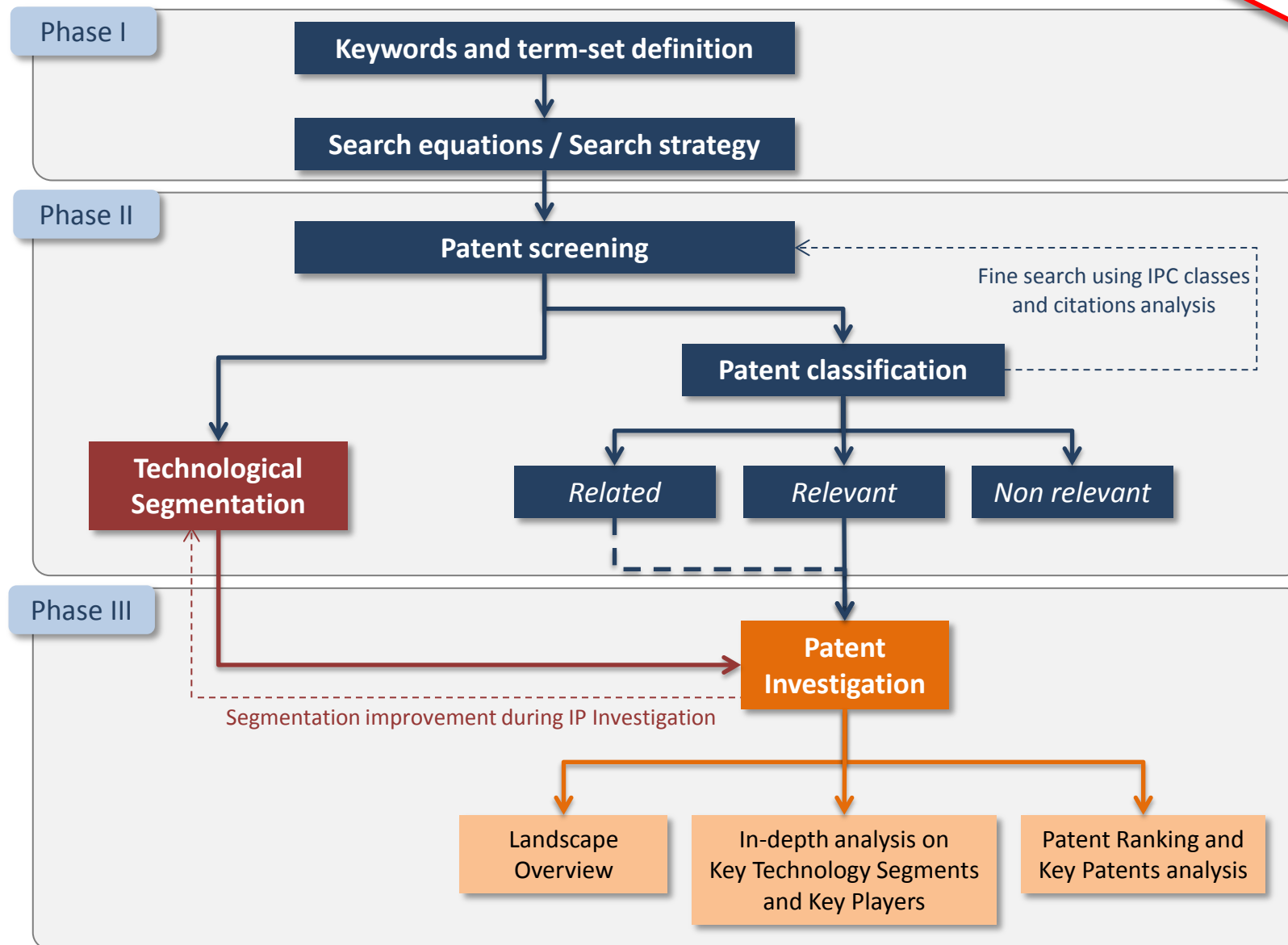
***Disclaimer:*** KnowMade are research firms that provides technical analysis and technical opinions. The research, technical analysis and/or work contained herein is not a legal opinion and should not be construed as such.



# INTRODUCTION

## Methodology (2/2)

REPORT  
SAMPLE

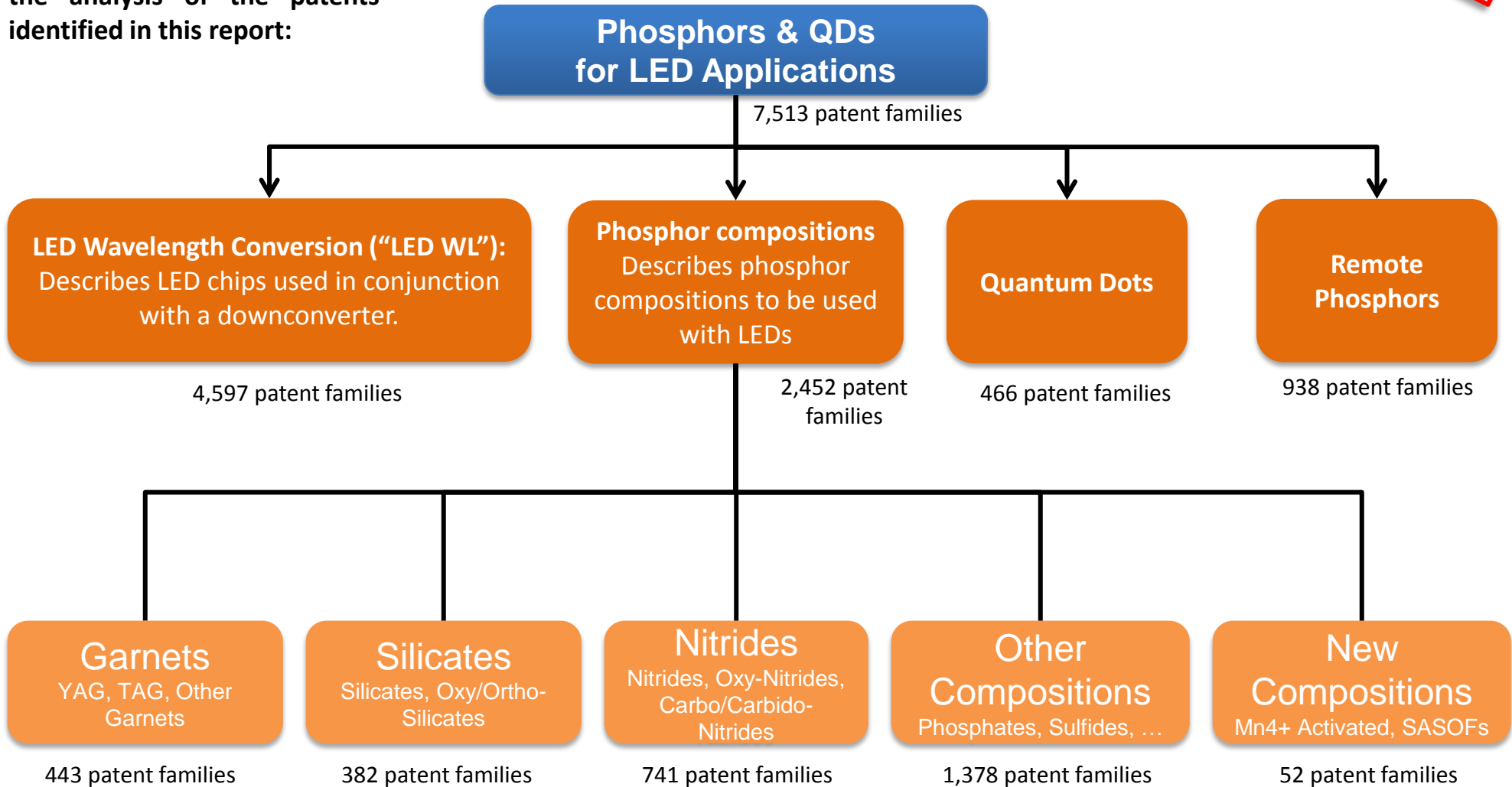


# INTRODUCTION

## Segmentation of Patents by Type

REPORT  
SAMPLE

The following segmentation for the analysis of the patents identified in this report:

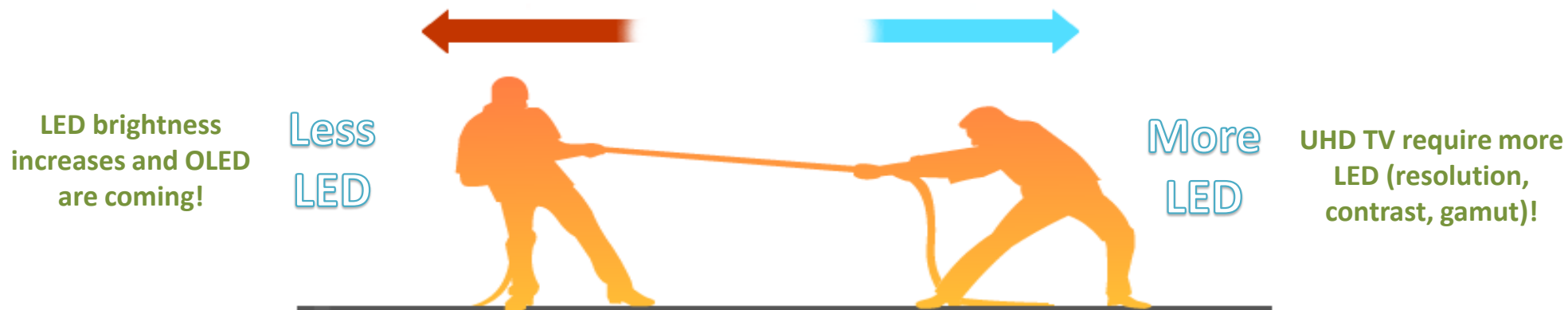


# LED Market Trends - Display

REPORT  
SAMPLE

Oposing forces are driving the market in LCD backlight display applications. While backlight display applications are still expected to saturate in 2015, the decline will be slower than initially anticipated thanks to:

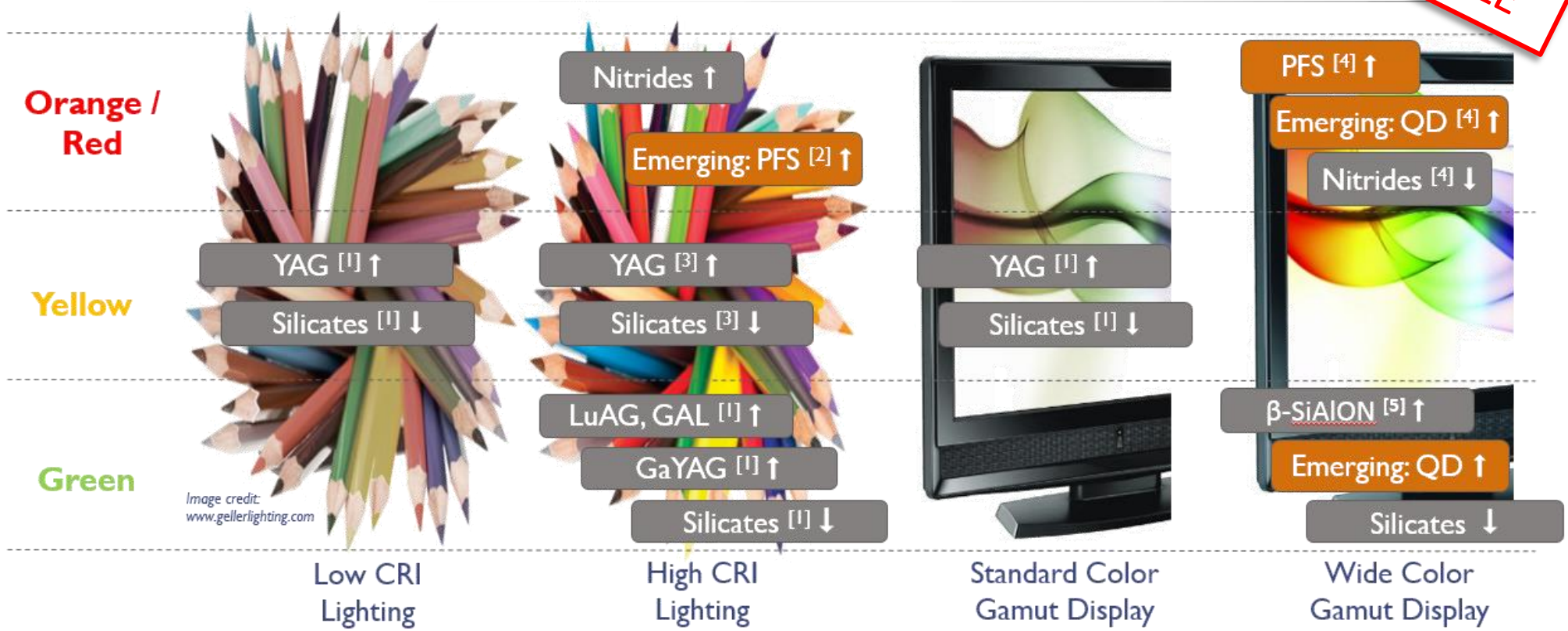
- The delayed introduction of affordable OLED TV (pushed back to 2017).
- Various image quality improvements promoted by the display industry that will translate in increased brightness requirements for the backlight unit in LCD displays (= more LEDs per display).



- OLED share increasing in mobile displays (smartphone, phablets).
- Improving LED efficiency and flux per package.
- Quantum dots → white LED replaced by blue LEDs → lower value captured by LED packagers.
- OLED in TV delayed until 2017 (?) → LED + Quantum Dots to fill the gap.
- 4K → requires brighter backlight units.
- Wide Color Gamut: inherently less efficient → require higher blue pump flux.
- High Dynamic Range → higher peak brightness.
- Demand for larger displays.

# Segmentation of LED Downconverter Materials

REPORT SAMPLE



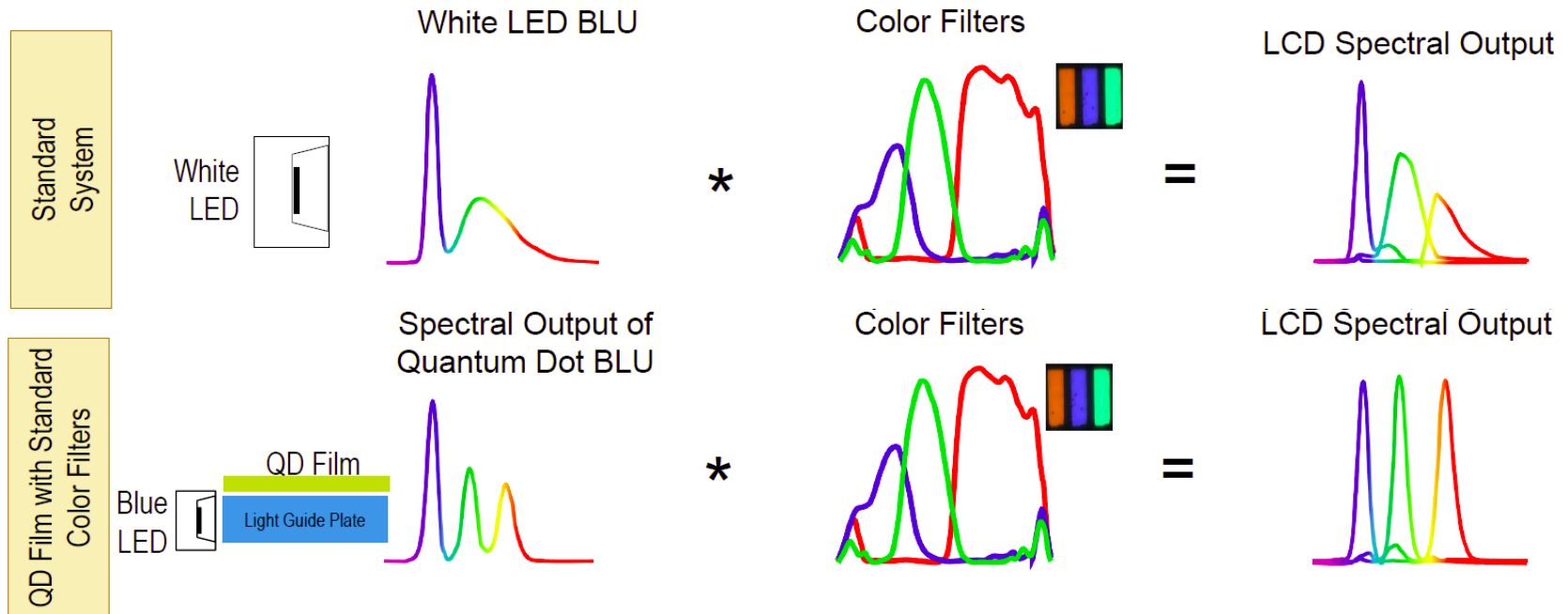
[1]: Silicates loosing ground but still used by IP conscious companies which don't have a license for garnets. Expect garnets to strongly dominate after when key patent expire in 2017  
 [2]: PFS limited to low/mid power LEDs but narrow band offers efficiency improvement.  
 [3]: Yellow phosphor are only used in niche applications with very high CRI (>95). A combination of broadband green + red is usually sufficient.

[4]: PFS gaining ground in Japan thanks to very narrow emission band. But slow decay speed is an issue for some Korean TV makers. QD discussed in dedicated section of the report.  
 [5]: β-SiAlON currently the best phosphor option due to narrow band and good stability. Silicates still an option in entry level and smaller displays but price gap is narrowing.

# Quantum Dots in LCD Display Backlights

REPORT  
SAMPLE

- With traditional white LEDs, the light source doesn't exhibit separate peaks for each primary color. The color performance of the display therefore relies on the color filters and a lot of light is left out.
- Quantum dots are well suited to enable narrow sub-pixel output spectral distributions: they produce narrow output spectral distributions that are easily tunable in peak wavelength to match any set of LCD color filters (illustration: 3M).
- Tunable emission characteristics allow close match with LCD color filters.

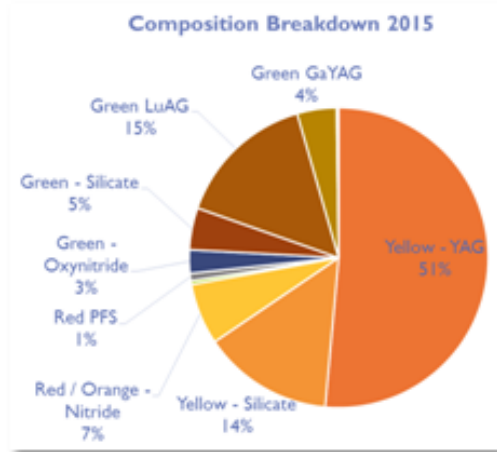


	Blue (LED Chips)	Green (QD)	Red QD
FWHM (nm)	15 nm	~ 30 nm	~ 40 nm

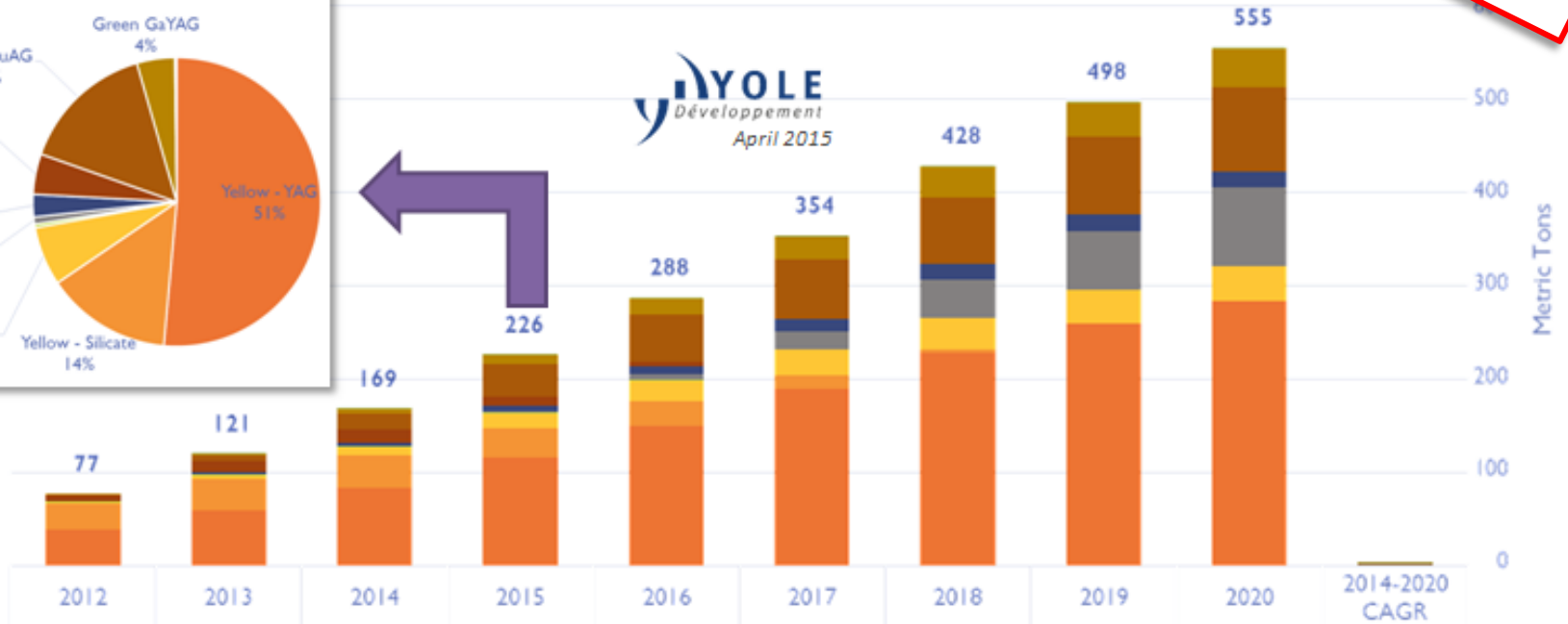
Typical spectral output of a CdSe-based QD BLU

# 2012-2020 Volume Forecast (Including Remote Phospho)

REPORT SAMPLE



YOLO Développement  
April 2015

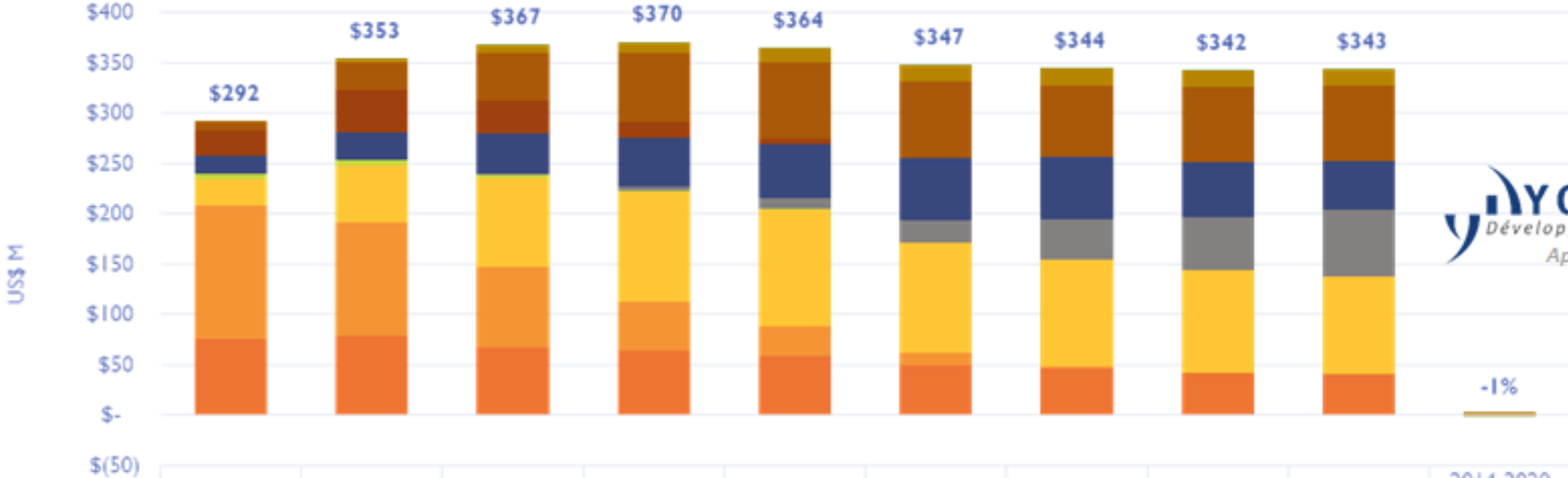


	2012	2013	2014	2015	2016	2017	2018	2019	2020	2014-2020 CAGR
Blue										
Green GaYAG										
Green LuAG										
Green - Silicate										
Green - Oxynitride										
Red PFS										
Red / Orange - Silicates										
Red / Orange - Nitride										
Yellow - Silicate										
Yellow - YAG										
Total (metric tons)										

# 2012-2020 Phosphor Revenue Forecast

REPORT  
SAMPLE

Phosphor Material Revenue On-Chip + Remote Conversion



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2014-2020 CAGR
Blue										
Green YAG										
Green LuAG / GAL										
Green - Silicate										
Green - Oxynitride										
Red PFS										
Red / Orange - Silicates										
Red / Orange - Nitride										
Yellow - Silicate										
Yellow - YAG										
Total (US\$m)	\$292	\$353	\$367	\$370	\$364	\$347	\$344	\$342	\$343	-1%

Despite significant volume increase, revenue will remain essentially flat due to strong price pressure.

# IP vs. Revenue for Leading LED packaging companies

REPORT  
SAMPLE

2014 LED Packaging Revenue Ranking	Region	Overall Patent Assignee Ranking		Patent Assignee Ranking "Wavelength Conversion"		Patent Assignee Ranking "Phosphor Compositions"	
		Global	Among LED Packaging Companies Only	Global	Among LED Packaging Companies Only	Global	Among LED Packaging Companies Only
#1 - Philips Lumileds	US	#1	#1	#1	#1	#1	#1
#2 - Cree	US	#2	#2	#2	#2	#2	#2
#3 - Osram	DE	#3	#3	#3	#3	#3	#3
#4 - Philips Lumileds	US	#4	#4	#18	#13	#4	#4
#5 - Nichia	JP	#5	#5	#5	#5	#5	#5
#6 - Cree	US	#6	#6	#6	#6	#5	#3
#7 - Nichia	JP	#7	#7	#7	#7	#6	#6
#8 - Nichia	JP	#8	#8	#20	#15	#7	#7
#9 - MLS	CN	#9	#9	#9	#9	#8	#8
#10 - Nichia	JP	#10	#10	#10	#10	#9	#9

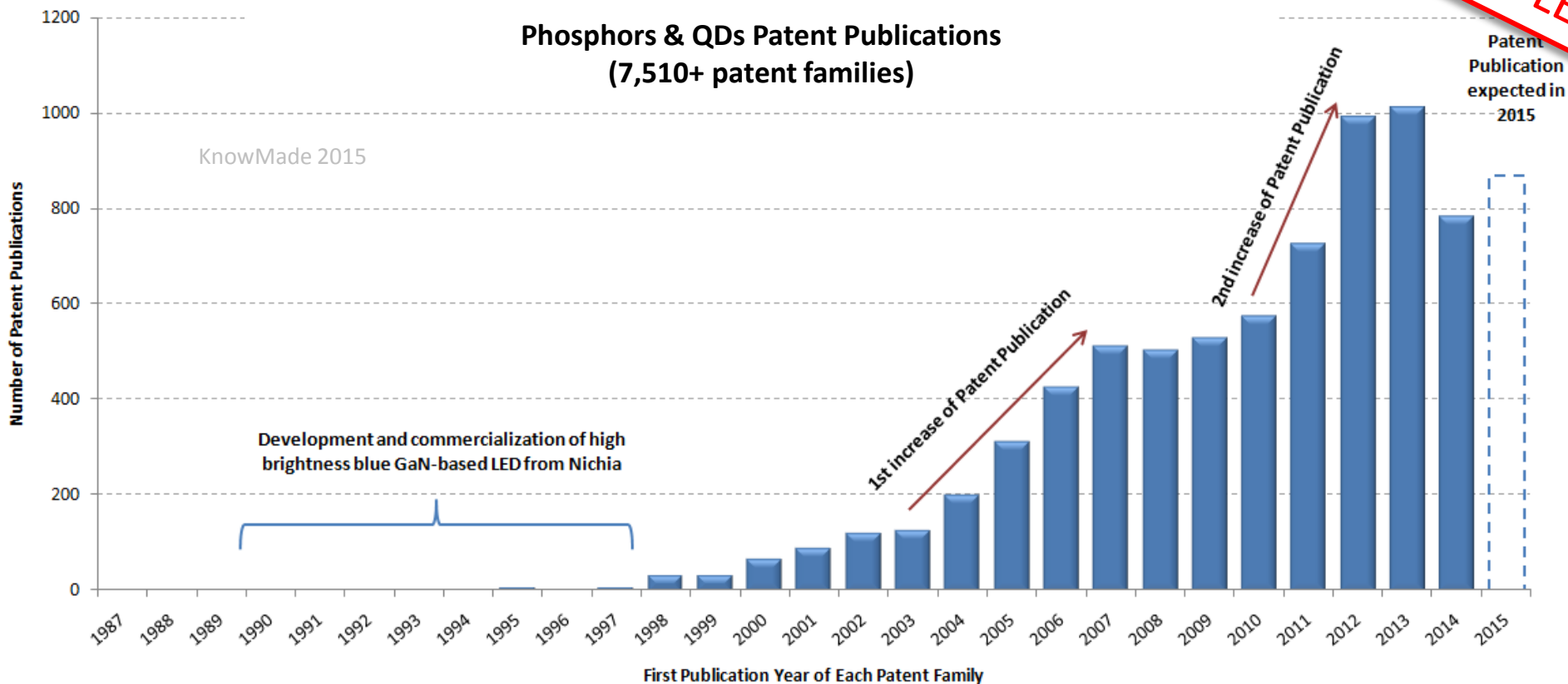
- To the exception of **Osram** which, for the first time dropped off the top 10 of LED packaging company revenue in 2014, this strength is reflected in their technology portfolio and ranking of patent assignees.
- Osram** and **Philips Lumileds** are representing the second wave of entrants in the top 10. SSC managed to build a large phosphor-related IP portfolio, which even outranks that of **Osram**. **Osram** ranking only #24 among LED packagers in phosphor-related patent applications.
- As "latecomers", both **Osram** managed to develop leading IP portfolios thanks to their strong capacity to invest in R&D.
- MLS** was established in 1997 but entered the high brightness, phosphor-converted LED business much later. On its own admission, the company focuses on cost, quality and manufacturing efficiency rather than innovation. Nevertheless, it has grown remarkably showing that with a strong position in the Chinese market, one can enter the top 10 LED packaging company without a sizable IP portfolio. However, it remains to be seen if the company will be able



# IP Landscape – General Overview

## Time Evolution of Patent Publications

REPORT  
SAMPLE



The first patents of the study were published in 1980s by Japanese companies (Mitsubishi, Toshiba, Nichia, NIMS, Panasonic...). But the take-off of patenting activity was really observed ten years later after Nichia, Toyoda Gosei and a few others developed and commercialized high brightness blue GaN-based LED from Nichia.

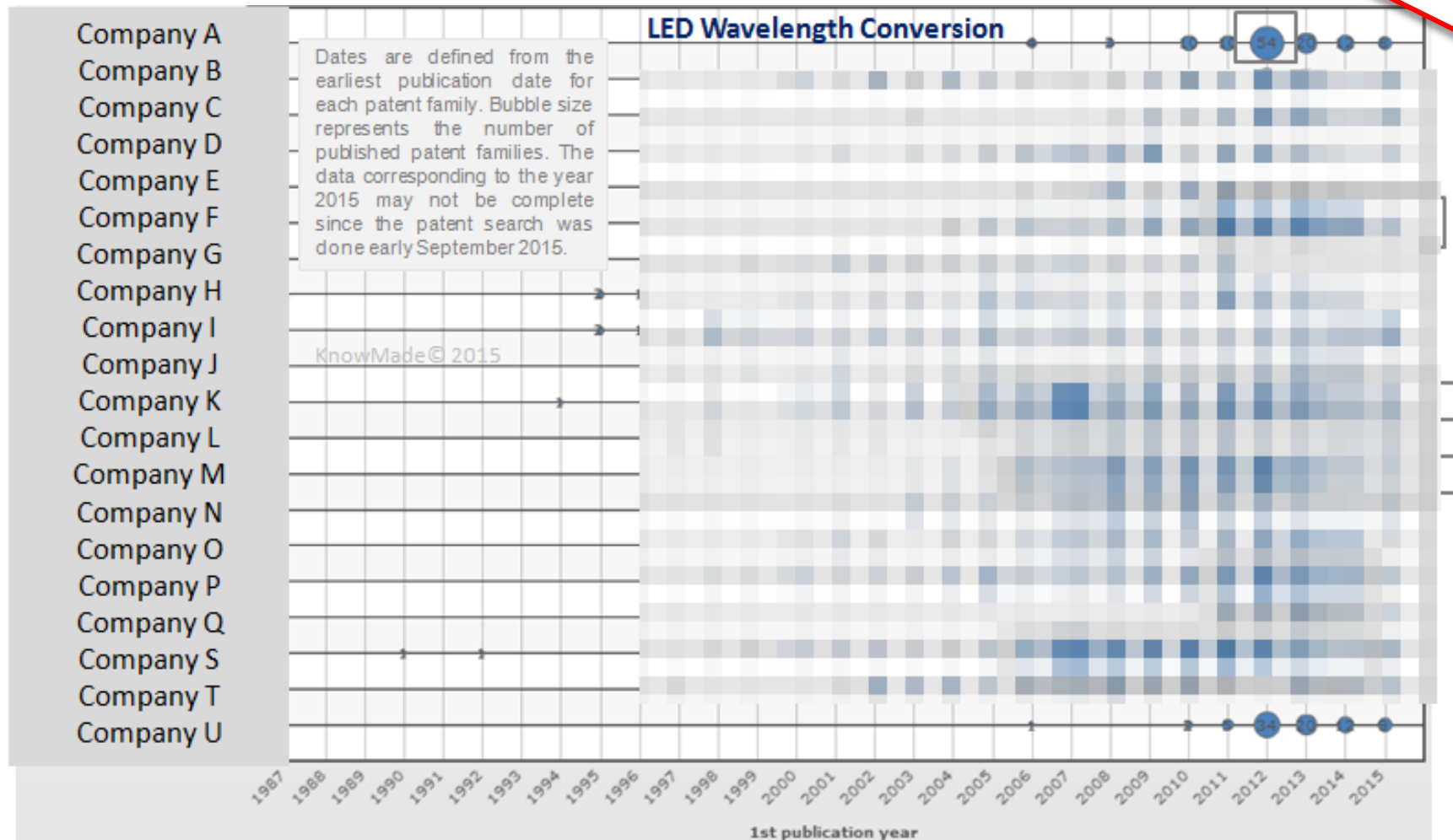
A first wave of patent publications over the 2003-2007 period is mainly due to Japanese companies (Panasonic and Toshiba) publishing on LED with Wavelength Conversion material. A second wave of patent publications also on LED with WL converter started in 2010, mainly originating from AOT, Samsung and Stanley Electric. The increase of patent publication on Phosphor Composition follow the LED patent publication increase although more slowly.

Note: The data corresponding to the year 2015 is not complete since the patent search for this report was performed in September 2015.

# IP Landscape – General Overview

## Time Evolution of Patent Assignees

REPORT SAMPLE



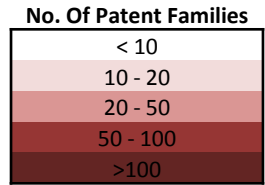
- The top-3 players in the Wavelength conversion category have been on the most active since 2005-2006.
- Since 2011, **XXX** and **XXX** have increased their activity in this technology.
- **XXX** and **XXX** show high number of publications in 2012 indicating that

# IP Landscape – Patent Segmentation

Matrix Applicant / Patented Technology: top 25

**REPORT  
SAMPLE**

RANK	PATENT APPLICANTS	Position on the supply chain			Claimed Invention				Total No of Patent Families
		Phosphor / QD Maker	Packaged LEDs	Systems [1]	LED Wavelength Conversion	Phosphor compositions	QDs	Remote	
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25	LITE ON [TW]		X	X	37	19	1	3	57



- Note that a patent can be found in several categories.
- Note that this representation reflects clear and accessible information available in patent abstract, claims or sometimes description.

# Phosphor Compositions – Patent Segmentation

Matrix Applicant / Patented Technology

**REPORT  
SAMPLE**

RANK	PATENT APPLICANTS	Compositions										
		YAG	Other Garnets	Silicates	(Oxy/Ortho)-Silicates	Nitrides	Oxynitrides	(Carbo/Carbido)-Nitrides	Mn4+ activated	SASOFs	Other Compositions	Patent Families
1												
2												
3												
4												
5												
6												
7	STANLEY ELECTRIC [US]	6					39	47			15	276
8												
9												
10												
11												
12												
13												
14												
15												
16							21	62				
17												
18												
19												
20												
21												
22												
23	EVERLIGHT [TW]						4	10				65
24												
25												
25												

- Note that a patent can be found in several categories.
- Excludes Quantum Dots (analyzed separately)
- Note that this representation reflects clear and accessible information available in patent abstract, claims or sometimes description.

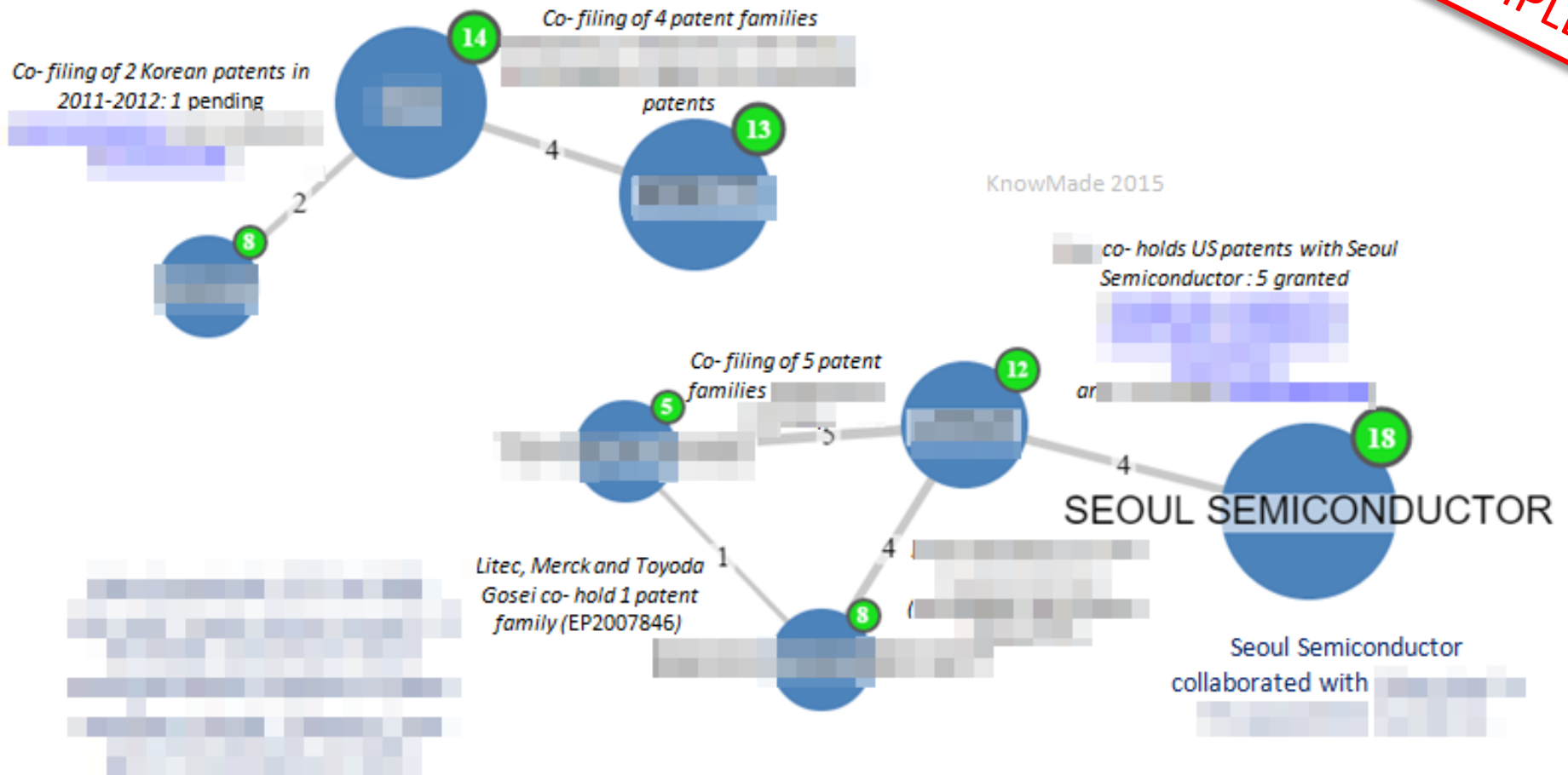
No. Of Patent Families	
< 10	
10 - 20	
20 - 50	
50 - 100	
>100	

Continued next page...

# Phosphor Compositions – SILICATES

## Patent Assignee IP Network

REPORT  
SAMPLE

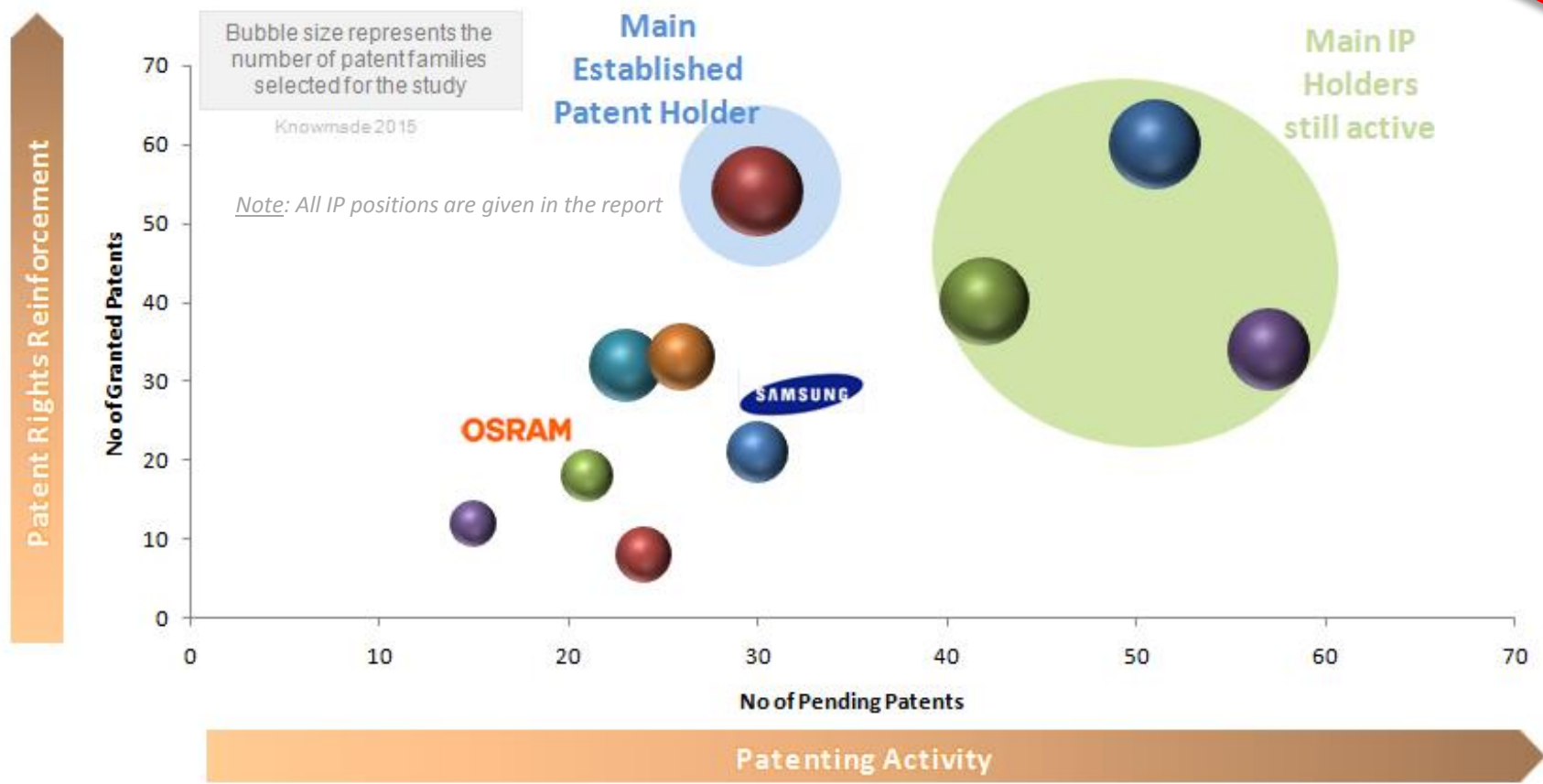


- Number in black on each link between applicants is the number of co-assigned patent families in the data set of the study.
- Number up right to each bubble is the number of patent families for this applicant in the data set of the study.
- Bubble size is proportional to the number of patent families selected for the study.

# Nitrides & Oxynitrides

## Leadership of Patent Assignees

REPORT SAMPLE

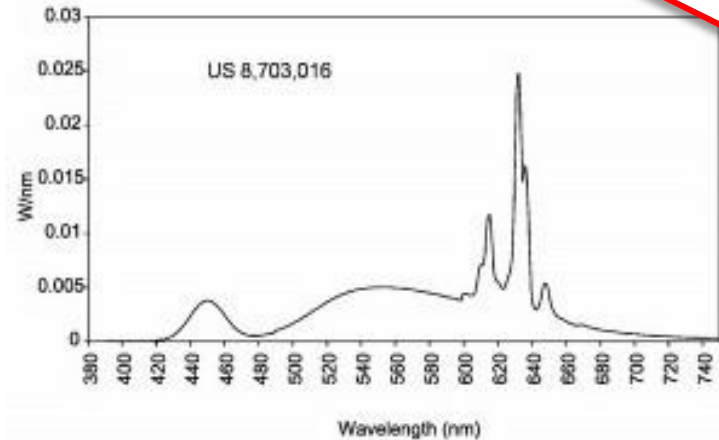


- [redacted] remain the most active in the segment.
- [redacted] already has a strong portfolio and remains very active with more than 30 pending patent applications.
- [redacted] has a lower number of granted patents but is currently working on new narrow band nitride compositions (SLA:  $\text{SrLiAl}_3\text{N}_4:\text{Eu}$  and SMS:  $\text{SrMg}_3\text{SiN}_4:\text{Eu}$ )
- [redacted] also develops new compositions.

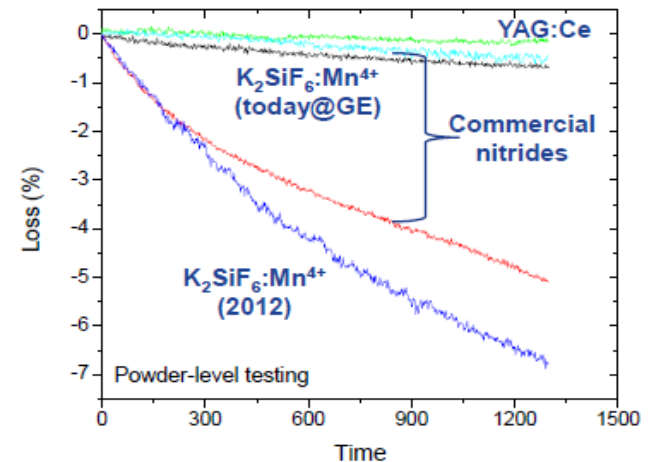
# New Compositions: Overview (1/3)

REPORT  
SAMPLE

- Phosphors based on  $Mn^{4+}$  emission have been the object of particular attention from the LED community due to their very narrow emission spectra with strong emission in the red.
- Amongst the various families of host matrix considered, PFS (potassium fluorosilicate) such as the  $K_2SiF_6$  (also referred as KSF) developed by GE<sup>[1]</sup> has emerged as a potential winner with narrow emission peaks at 613, 631, 636, 648 nm with FWHM of 3 to 4 nm, much narrower than nitrides.
- This provides better color separation and matching with the filters for LCD displays. Combined with a green phosphor and a blue emitter, color gamut of up to 100% of the NTSC space have been obtained while maintaining brightness & efficiency.
- PFS, developed for CCFL, were initially abandoned due to high sensitivity to contamination during manufacturing and rapid degradation under high temperature / humidity conditions. But technologies have been developed to eliminate the  $Mn^{4+}$  ions from the phosphor particle surface and stabilize the material.
- Stability has improved enough to allow on-chip use in commercial mid-power LED. Further improvement might however be required to guaranty long term stability in high power LEDs.



Emission spectra of a blend of SASOF-10, CBASIN and PFS phosphors pumped by a blue LED. The resulting light source has a CRI of 97 and a R9 of 93, a color temperature of 300K and a luminosity of 330 lumens/optical watt (Source: GE patent US 8,703,016)



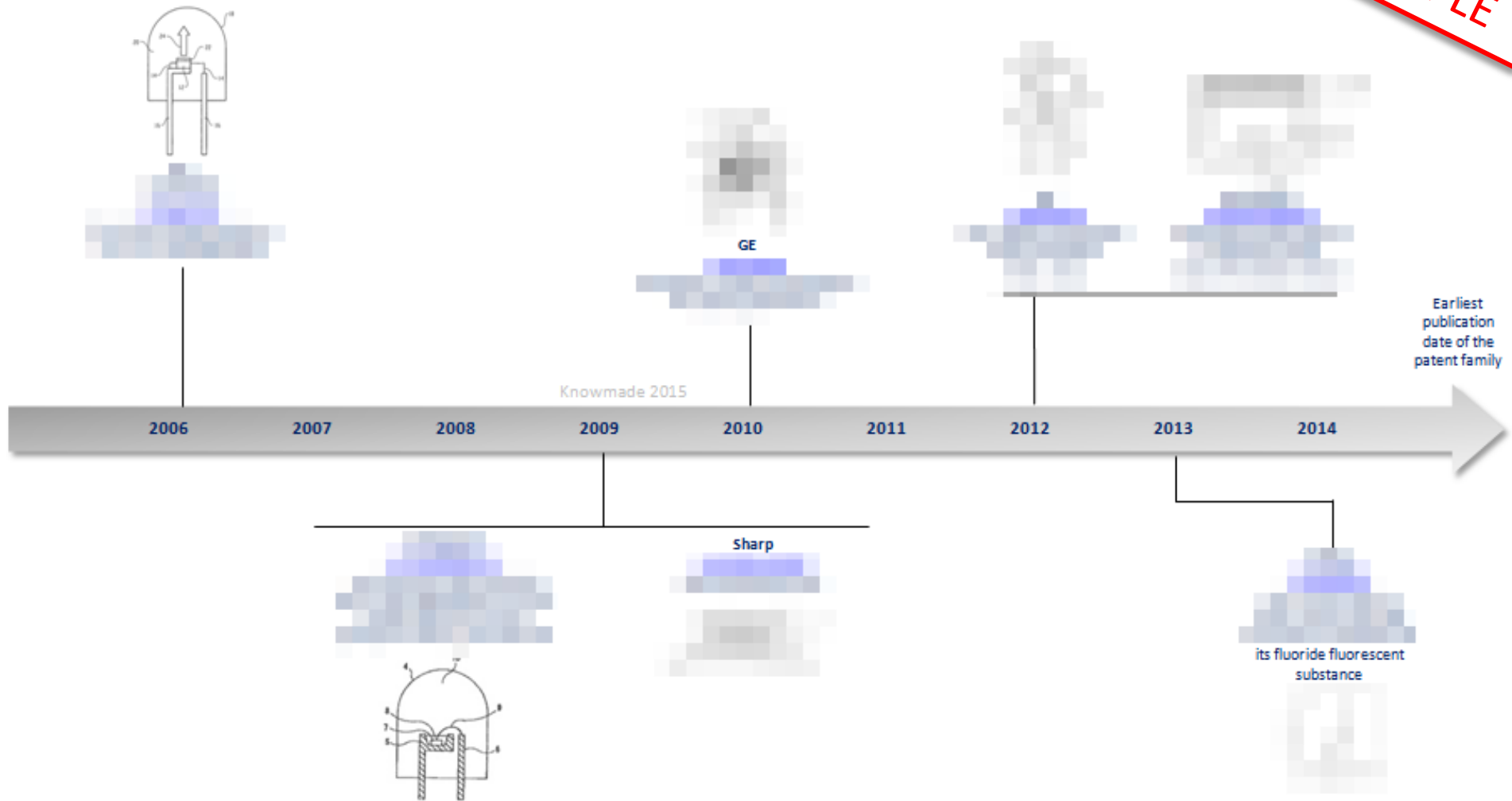
Improvement of GE's PFS stability between 2012 and 2015

[1] Other examples:  $K_2[TiF_6]:Mn^{4+}$ .C.f US patent 8,703,016 and 20120299466

# New Compositions

## Key Patent Families

REPORT  
SAMPLE



Patent numbers correspond to representative member of the families, assignee names take into account original applicants and reassignments.



# Example of New Compositions

REPORT  
SAMPLE

- Garnets, Silicates/ orthosilicate, Nitride/ Oxynitrides and more recently Mn<sup>4+</sup> activated PFS are currently the major families of commercial phosphors.
- There's a lot of continuous research activity to keep developing new compositions with improved performance for LED applications. The following tables provide example of such compositions identified in the corpus of patents studied for this report. Those include a variety of aluminate, tungstates, vanadates, fluorides, borates, oxychlorides etc...

Patent	Title	Assignee	Priority Date	Overview
[Redacted]	Green color and yellow luminous phosphorus acid fluorescent substance	[Redacted]	2014	[Redacted]
[Redacted]	[Redacted]	University of Niigata	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	Panasonic	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]

# Quantum Dots

## Mapping of Main Current IP Applicants (pending patents)

REPORT SAMPLE

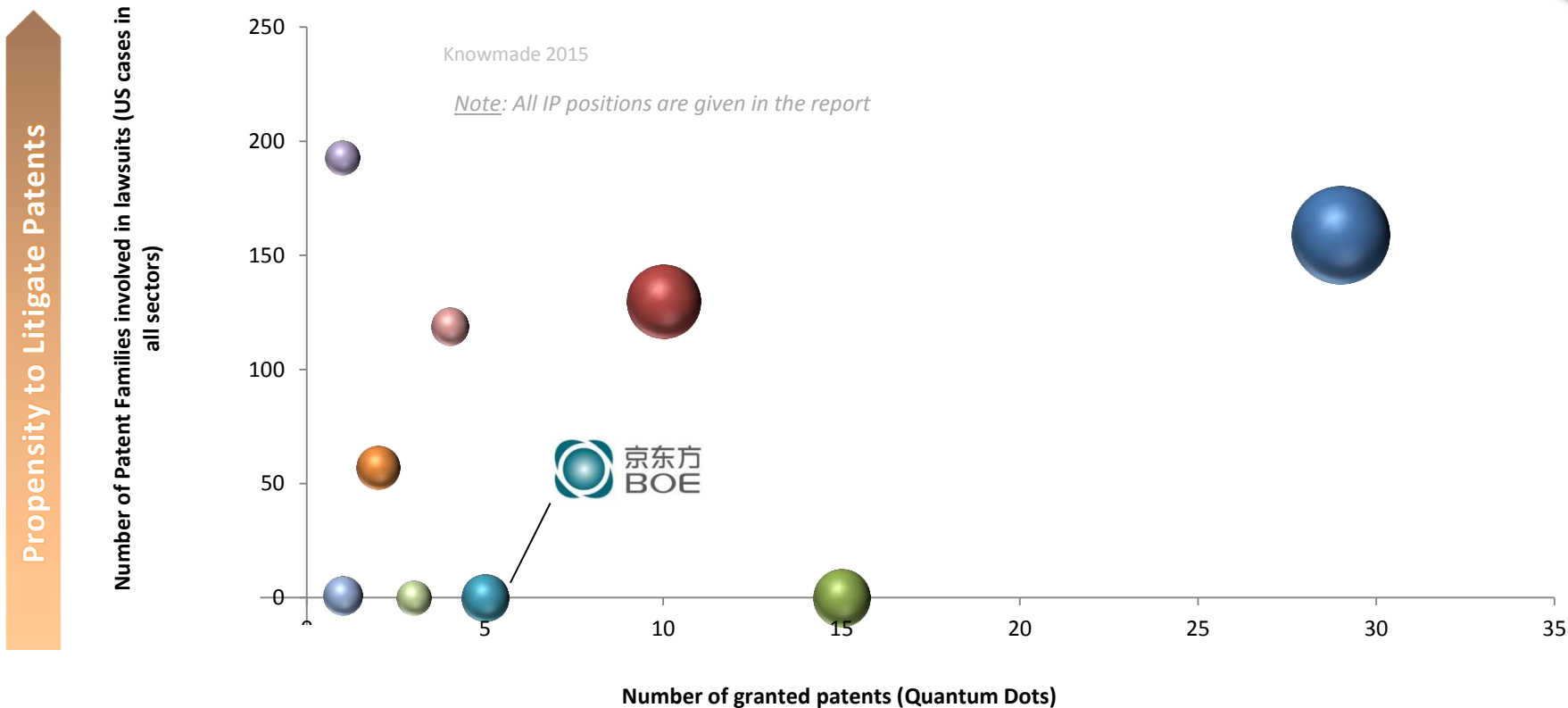


- There's an increasing level of activity in China which is poised to become the largest display market (TV, monitors...) and is home of an increasing number of display manufacturers with global ambitions:

# Quantum Dots

## Potential Future Plaintiffs

REPORT  
SAMPLE



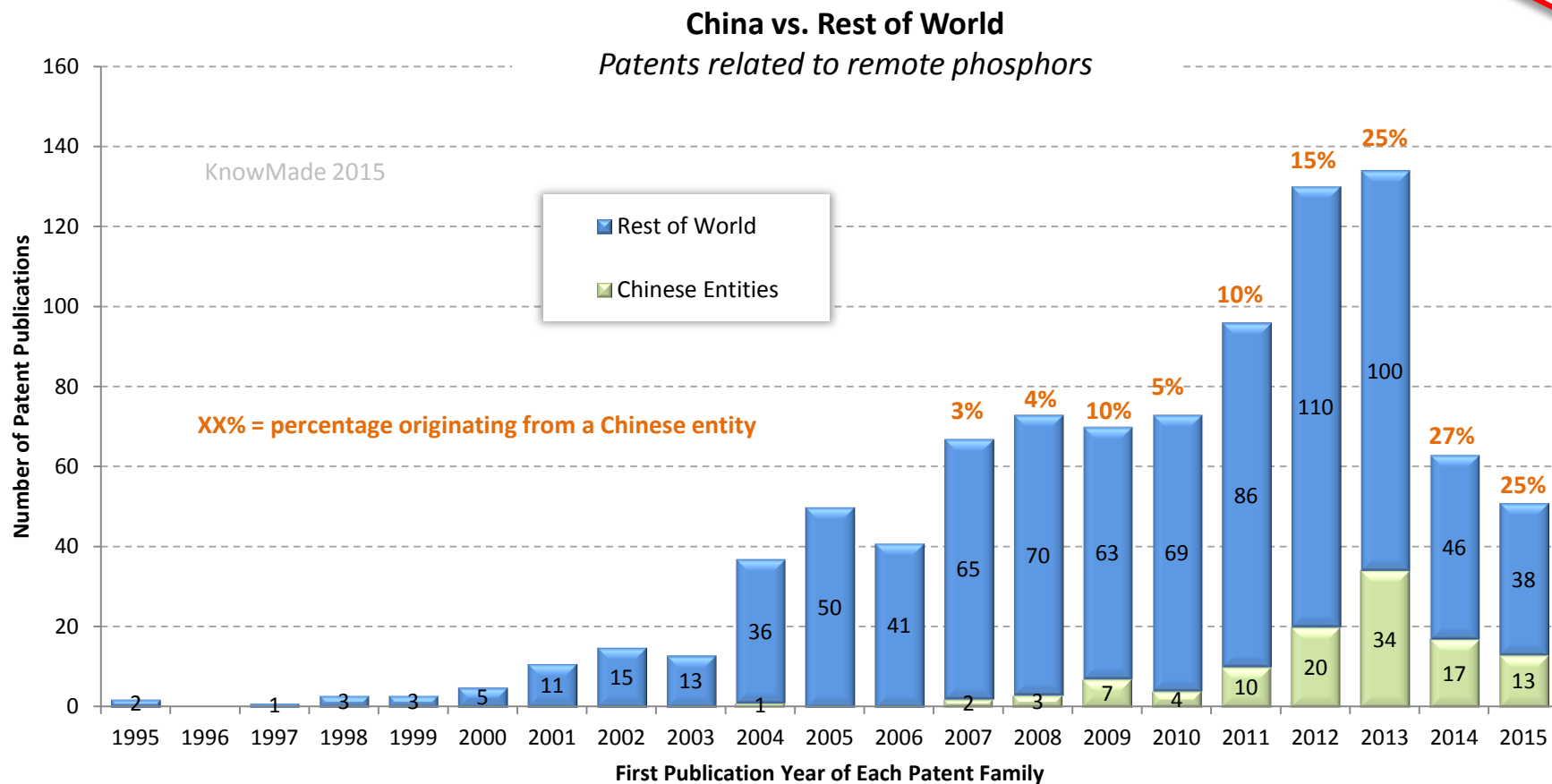
### Patent Rights Reinforcement

- [Redacted] is leading. The company has the largest portfolio of quantum dot patents pertinent to LED applications and [Redacted]

# Focus on China: Remote Phosphors

## Time Evolution of Patent Publications

REPORT  
SAMPLE



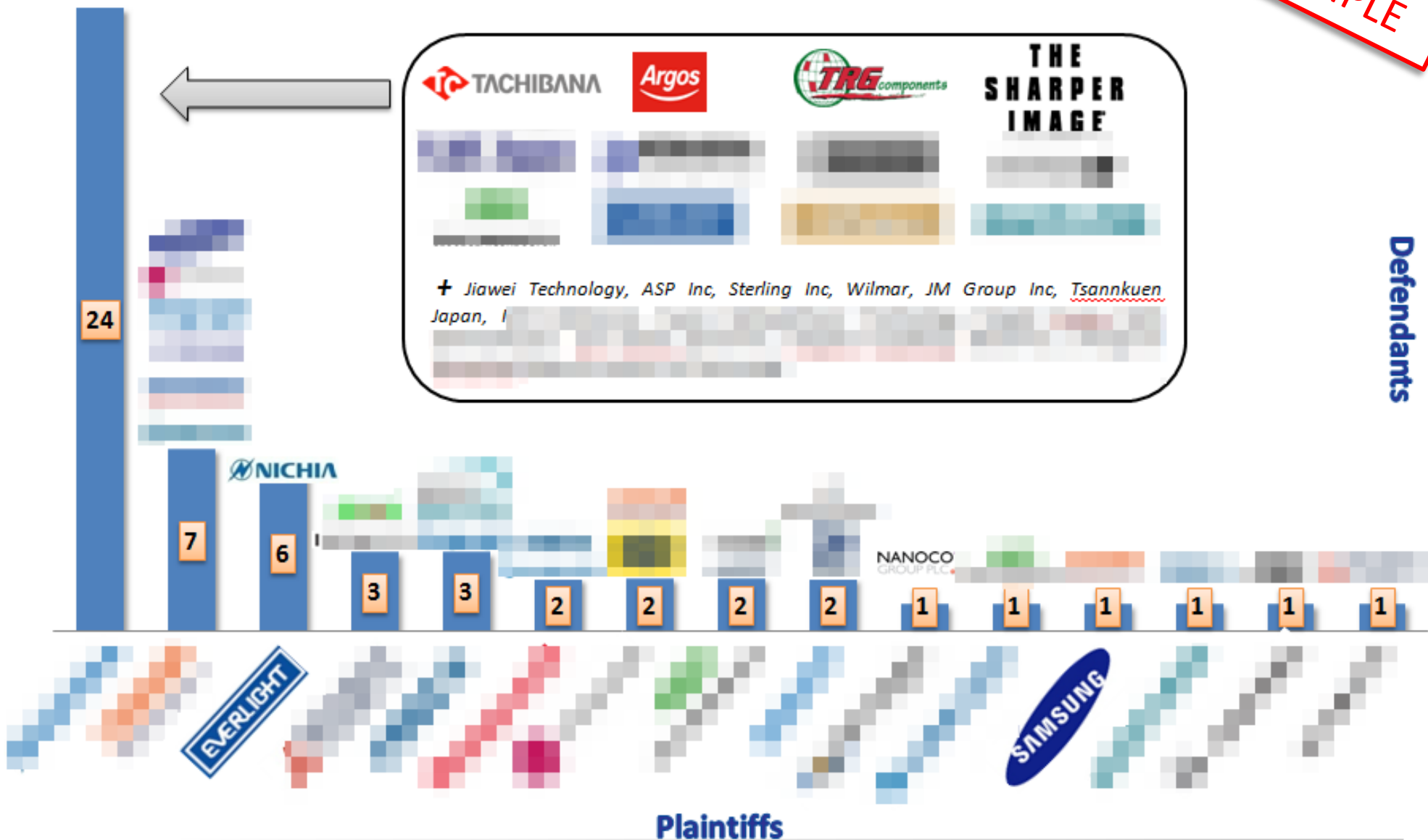
- IP Activity in China on Remote Phosphors represents a quarter of worldwide published patents since 2013.

*Note: The data corresponding to the year 2015 is not complete since the patent search was performed in September 2015.*

# Litigation Plaintiffs and Defendants

## Infringement and Invalidation Procedures.

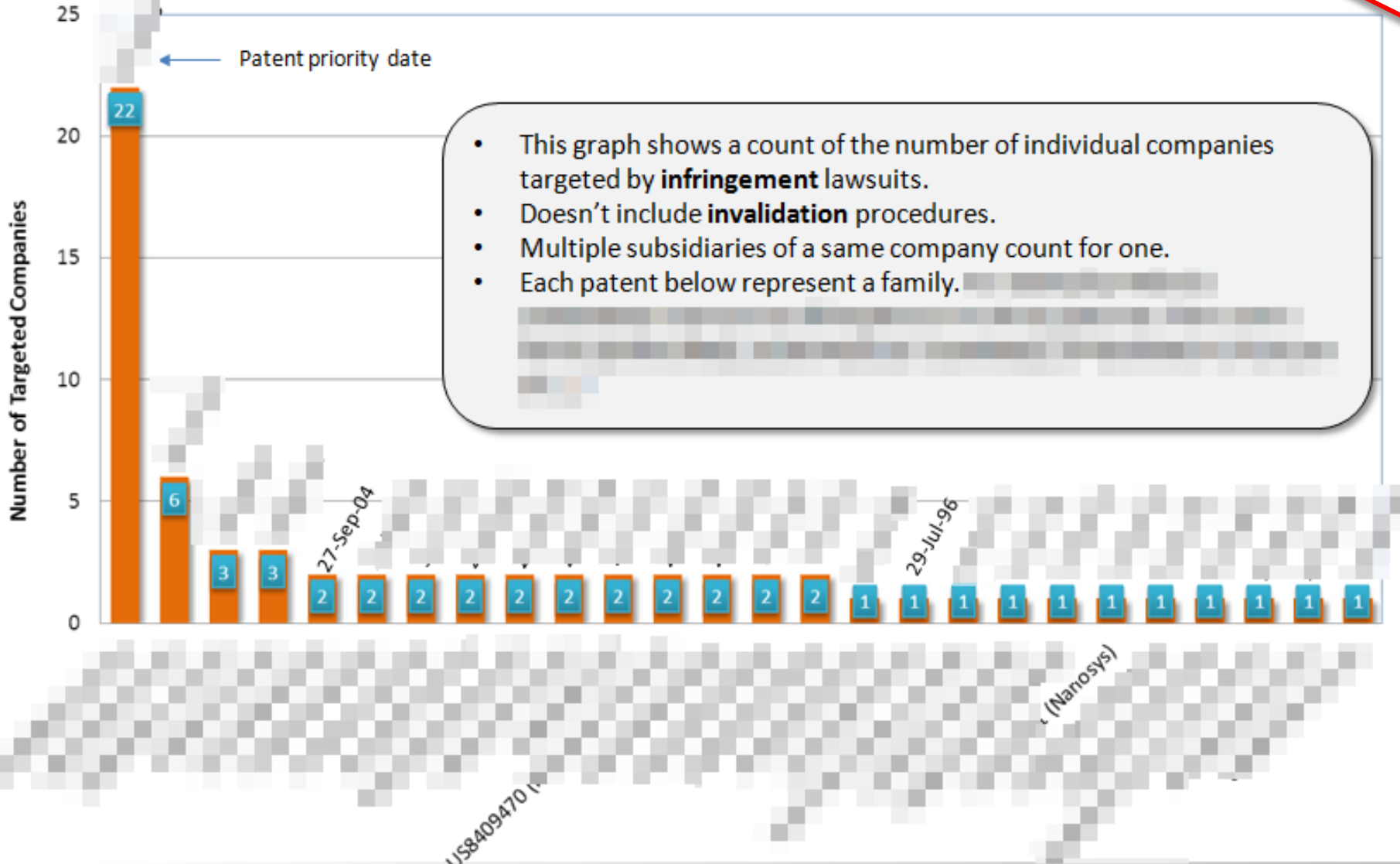
REPORT  
SAMPLE



# Patents Families Most Cited in Infringement Litigations

REPORT  
SAMPLE

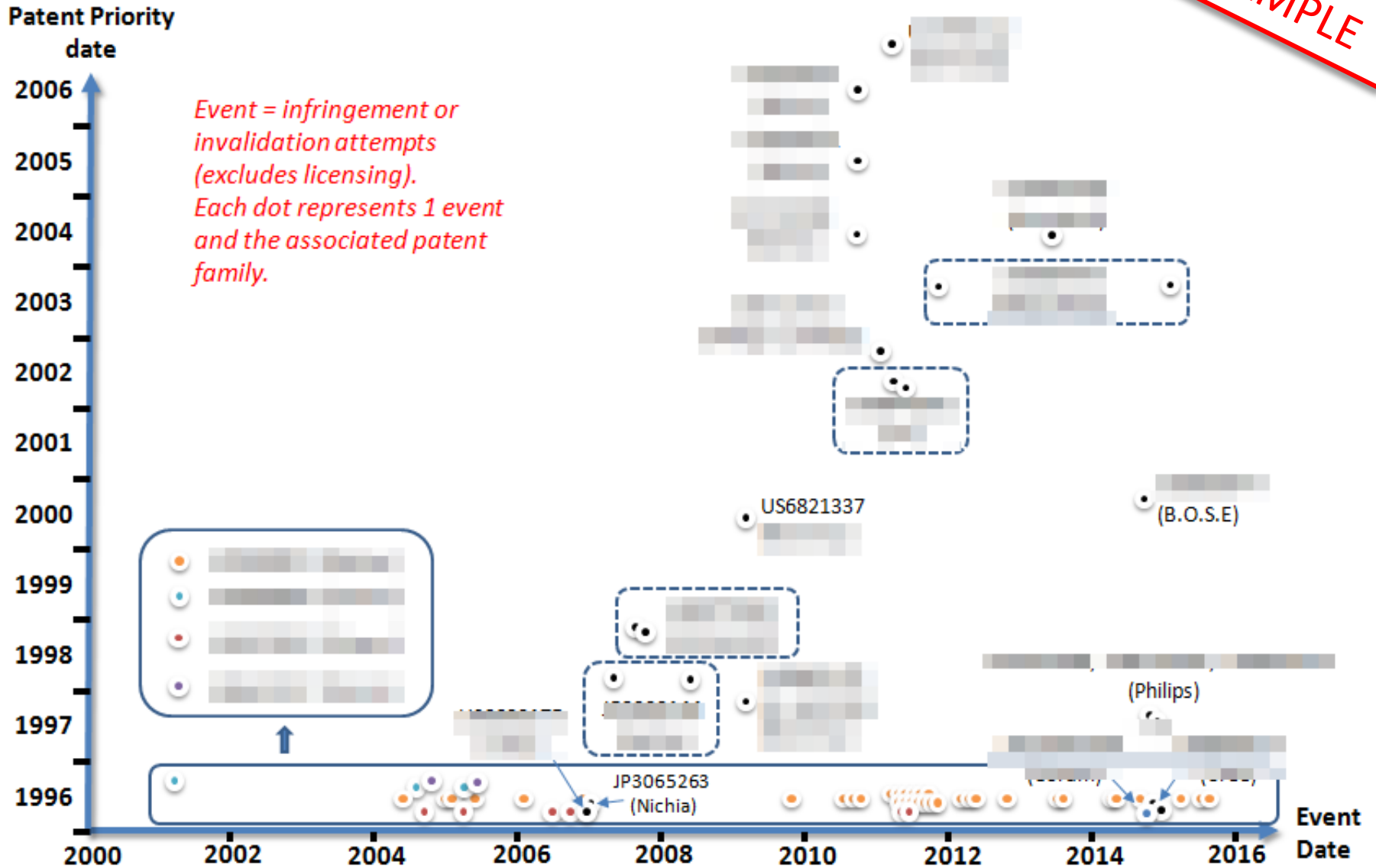
### By Number of Targeted Companies



- This graph shows a count of the number of individual companies targeted by **infringement** lawsuits.
- Doesn't include **invalidation** procedures.
- Multiple subsidiaries of a same company count for one.
- Each patent below represent a family.

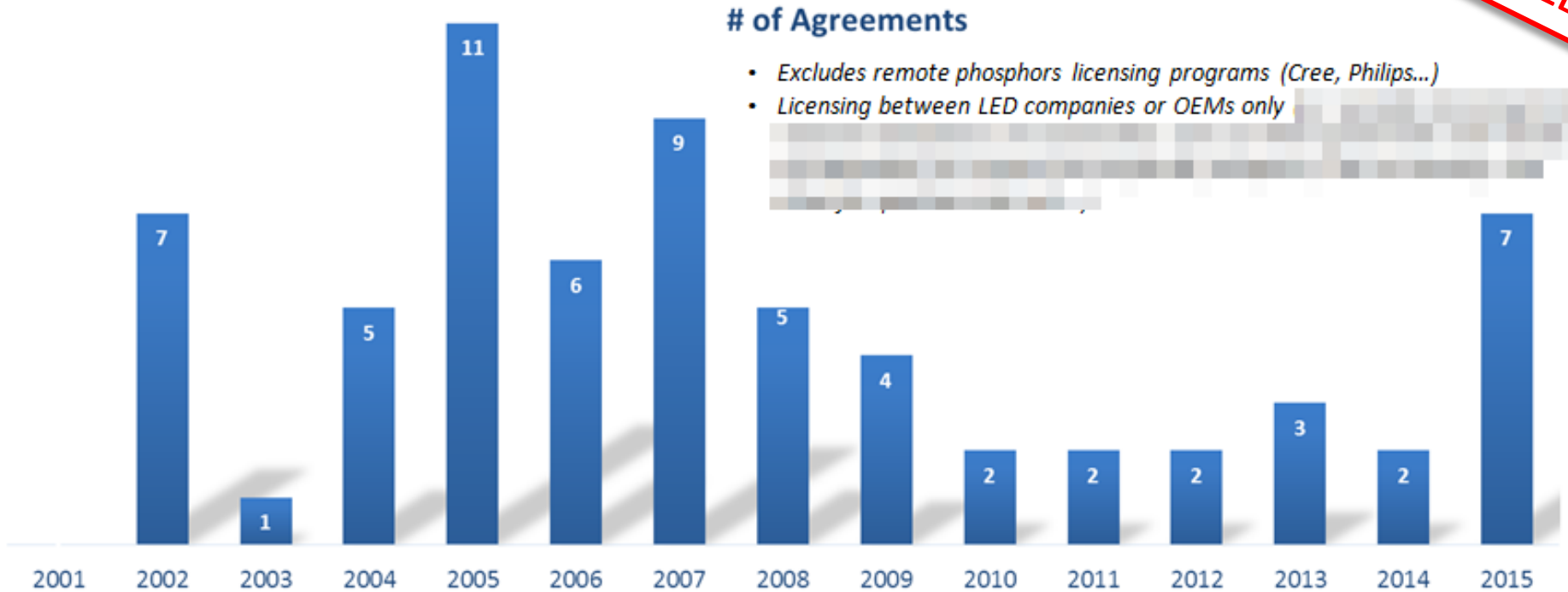
# Litigation date vs. Priority Date (1/2)

REPORT SAMPLE



# Phosphor Patent Licensing Activity: 2001-2015 Chronicle

REPORT  
SAMPLE



- Excludes remote phosphors licensing programs (Cree, Philips...)
- Licensing between LED companies or OEMs only

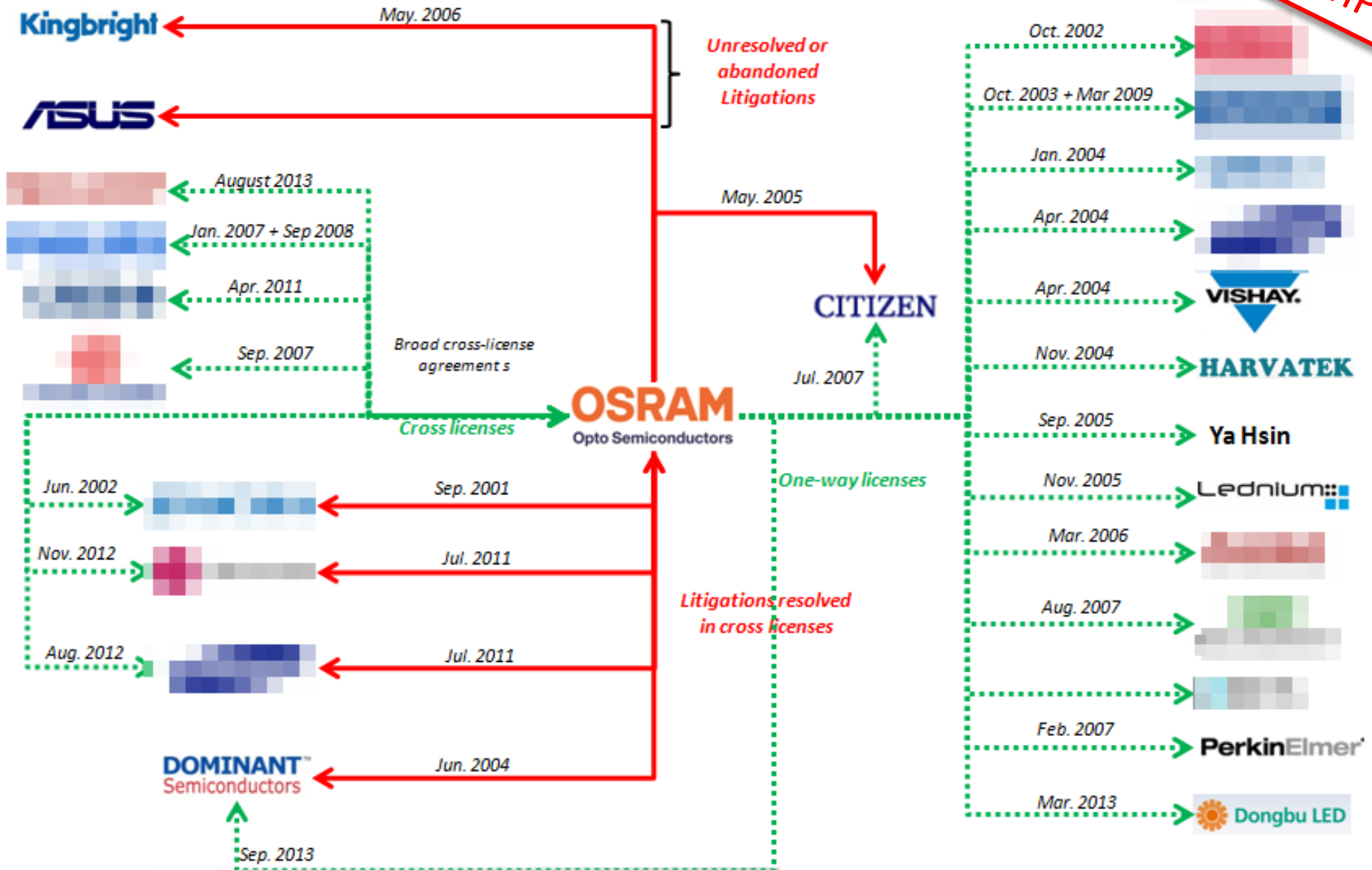
- Licensing agreements and whether they relate specifically to phosphors are difficult to track because they are not always made public. The graph above shows a timeline of the phosphor related agreements that have been identified and made public (or broad licensing agree that involve at least one phosphor patent)
- The peak of activity is situated in 2005-2006 and is dominated by [redacted]

Other significant events during this period include [redacted]



# Litigation and Licensing: Focus on Osram (1/2)

REPORT SAMPLE

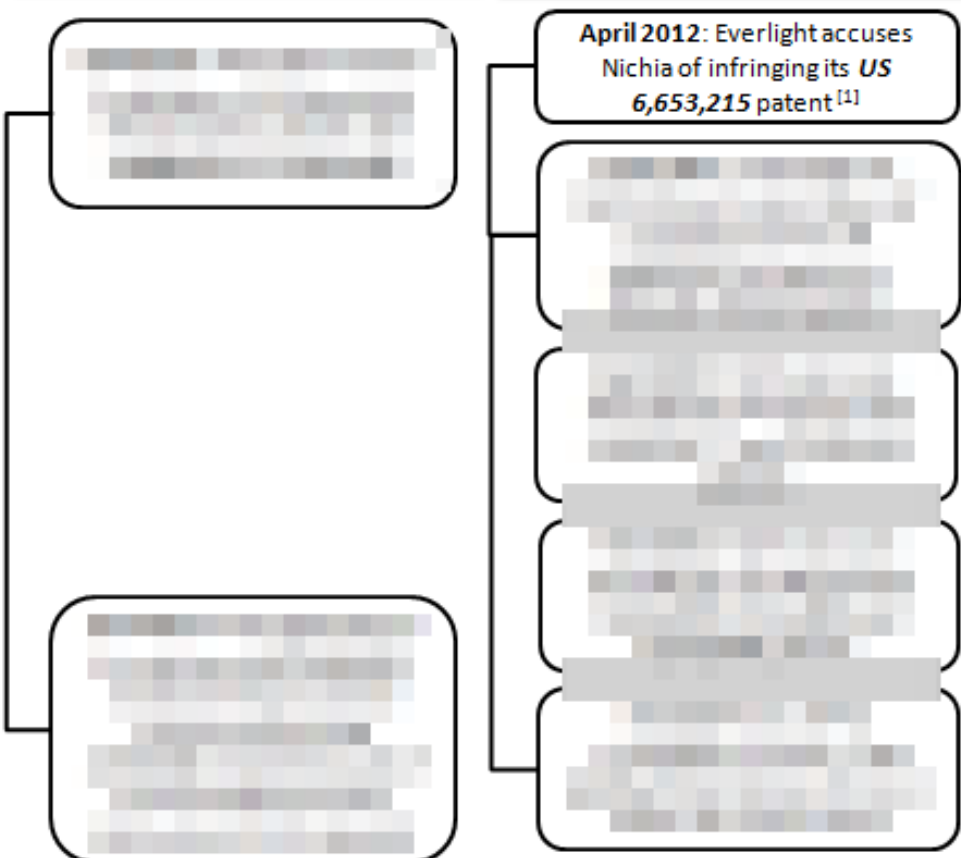


# Overview of Japan and US Litigations

REPORT SAMPLE



## Phosphor Related      Non Phosphor Related



## Phosphor Related      Non Phosphor Related



[1]: LED metallization patent filed by [Redacted]  
 [2]: InGaAIP Laser patent originally filed by [Redacted]

# Expiring Patent Analysis

## Granted Patents Near Expiration

REPORT  
SAMPLE

Assignee	Title	Publication Number	PDF	Expected Expiration Date*	Comments	Related Litigations?
[Redacted]	[Redacted]	[Redacted]	<a href="#">Open</a>	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	<a href="#">Open</a>	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	<a href="#">Open</a>	[Redacted]	[Redacted]	[Redacted]
TAIWAN OASIS TECHNOLOGY	[Redacted]	[Redacted]	<a href="#">Open</a>	[Redacted]	[Redacted]	No
[Redacted]	[Redacted]	[Redacted]	<a href="#">Open</a>	[Redacted]	[Redacted]	[Redacted]
[Redacted]	White luminous element	JP5182399	<a href="#">Open</a>	27-11-2016	[Redacted]	No

\* Expected Expiration Date is dependent on the accuracy and timeliness of the information provided by the patent offices. This indicator may change at any time without notice based on new information received from the patent offices. No decision should be made based solely on this indicators.

# Excel Database

with all patents analyzed in the report with technology segmentation

**REPORT  
SAMPLE**



This database allows multi-criteria searches and includes patent publication number, hyperlinks to the original documents, priority date, title, abstract, patent assignees, technological segments and legal status for each member of the patent family.

KnowMade Phosphor & QDs Patent Landscape - January 2016									Segmentation								
Family Number (FamPat)	Publication Numbers	Publication Data & Hyperlink to original	Application Date (YYYY-MM-)	Application Number	Oldest Priority Date of the Family (YYYY-MM-DD)	Title	Abstract	Assignee	Claimed Invention				Other Segments				
									LED WL	Phosphor	QD	Remote	YAG	Other Garnets	Silicates	Oxy-Silicates	
			2013-06-11							x							
			2013-06-14								x						
			2013-06-09								x						
			2013-06-03							x		x					
			2013-06-03							x			x				
			2013-03-26							X							
			2013-03-25							X							
			2013-05-30								x					x	
			2013-05-30								x			X			
			2014-02-07							x							
			2013-02-08							x							
			2014-02-07							x							
			2013-05-29									x					
			2013-05-29							x							
			2013-05-29							x							

# ORDER FORM

## Phosphors & QDs for LED Application

January 2016

### SHIP TO

Name (Mr/Ms/Dr/Pr):

Job Title:

Company:

Address:

City:

State:

Postcode/Zip:

Country:

VAT ID Number for EU members:

Tel:

Email:

Date:

### PAYMENT METHODS

Order online: [Click here](#)

#### Check

To pay your invoice using a check, please mail your check to the following address:

KnowMade S.A.R.L.  
2405 route des Dolines, CS 10065  
06902 Sophia -Antipolis Cedex FRANCE

#### Money Transfer

To pay your invoice using a bank money wire transfer please contact your bank to complete this process. Here is the information that you will need to submit the payment:

Payee: KnowMade S.A.R.L.  
Bank: Banque populaire St Laurent du Var CAP 3000 - Quartier du lac- 06700 St Laurent du Var  
IBAN: FR76 1560 7000 6360 6214 5695 126  
BIC/SWIFT: CCBPFRPPNCE

#### Paypal

In order to pay your invoice via PAYPAL, you must first register at [www.paypal.com](http://www.paypal.com). Then you can send money to the KnowMade S.A.R.L. by entering our E-mail address [contact@knowmade.fr](mailto:contact@knowmade.fr) as the recipient and entering the invoice amount.

### RETURN ORDER BY

**E-mail:** [contact@knowmade.fr](mailto:contact@knowmade.fr)

**Mail:** KnowMade S.A.R.L. 2405 route des Dolines, 06902 Sophia Antipolis, FRANCE

#### PRODUCT ORDER

€4,990 – Single user license\*

€5,990 – Corporate license

For price in dollars, please use the day's exchange rate. For French customer, add 20% for VAT.

All reports are delivered electronically in pdf format at payment reception.

*\*Single user license means only one person at the company can use the report. Please be aware that our publication will be watermarked on each page with the name of the recipient and of the organization (the name mentioned on the PO). This watermark will also mention that the report sharing is not allowed.*

*I hereby accept Knowmade's Terms and Conditions of Sale*

**Signature:**

# Terms and Conditions of Sales

## Definitions

“Acceptance”: Action by which the Buyer accepts the terms and conditions of sale in their entirety. It is done by signing the purchase order which mentions “I hereby accept Knowmade’s Terms and Conditions of Sale”.

“Buyer”: Any business user (i.e. any person acting in the course of its business activities, for its business needs) entering into the following general conditions to the exclusion of consumers acting in their personal interests.

“Contracting Parties” or “Parties”: The Seller on the one hand and the Buyer on the other hand.

“Intellectual Property Rights” (“IPR”) means any rights held by the Seller in its Products, including any patents, trademarks, registered models, designs, copyrights, inventions, commercial secrets and know-how, technical information, company or trading names and any other intellectual property rights or similar in any part of the world, notwithstanding the fact that they have been registered or not and including any pending registration of one of the above mentioned rights.

“License”: For the reports and databases, 2 different licenses are proposed. The buyer has to choose one license:

1. One user license: a single individual at the company can use the report.
2. Multi user license: the report can be used by unlimited users within the company. Subsidiaries are not included.

“Products”: Reports are established in PowerPoint and delivered on a PDF format and the database may include Excel files.

“Seller”: Based in Sophia Antipolis (France headquarters), Knowmade is a technology intelligence company specialized in the research and analysis of scientific and technical information. We provide patent landscapes and scientific state of the art with high added value to businesses and research laboratories. Our intelligence digests play a key role to define your innovation and development strategy.

## 1. Scope

1.1 The Contracting Parties undertake to observe the following general conditions when agreed by the Buyer and the Seller. ANY ADDITIONAL, DIFFERENT, OR CONFLICTING TERMS AND CONDITIONS IN ANY OTHER DOCUMENTS ISSUED BY THE BUYER AT ANY TIME ARE HEREBY OBJECTED TO BY THE SELLER, SHALL BE WHOLLY INAPPLICABLE TO ANY SALE MADE HEREUNDER AND SHALL NOT BE BINDING IN ANY WAY ON THE SELLER.

1.2 This agreement becomes valid and enforceable between the Contracting Parties after clear and non-equivocal consent by any duly authorized person representing the Buyer. For these purposes, the Buyer accepts these conditions of sales when signing the purchase order which mentions “I hereby accept Knowmade’s Terms and Conditions of Sale”. This results in acceptance by the Buyer.

1.3 Orders are deemed to be accepted only upon written acceptance and confirmation by the Seller, within [7 days] from the date of order, to be sent either by email or to the Buyer’s address. In the absence of any confirmation in writing, orders shall be deemed to have been accepted.

## 2. Mailing of the Products

2.1 Products are sent by email to the Buyer:

- within [1] month from the order for Products already released; or
- within a reasonable time for Products ordered prior to their effective release. In this case, the Seller shall use its best endeavours to inform the Buyer of an indicative release date and the evolution of the work in progress.

2.2 Some weeks prior to the release date the Seller can propose a pre-release discount to the Buyer.

The Seller shall by no means be responsible for any delay in respect of article 2.2 above, and including in cases where a new event or access to new contradictory information would require for the analyst extra time to compute or compare the data in order to enable the Seller to deliver a high quality Products.

2.3 The mailing of the Product will occur only upon payment by the Buyer, in accordance with the conditions contained in article 3.

2.4 The mailing is operated through electronic means either by email via the sales department. If the Product’s electronic delivery format is defective, the Seller undertakes to replace it at no charge to the Buyer provided that it is informed of the defective formatting within 90 days from the date of the original download or receipt of the Product.

2.5 The person receiving the Products on behalf of the Buyer shall immediately verify the quality of the Products and their conformity to the order. Any claim for apparent defects or for non-conformity shall be sent in writing to the Seller within 8 days of receipt of the Products. For this purpose, the Buyer agrees to produce sufficient evidence of such defects.

2.6 No return of Products shall be accepted without prior information to the Seller, even in case of delayed delivery. Any Product returned to the Seller without providing prior information to the Seller as required under article 2.5 shall remain at the Buyer’s risk.

# Terms and Conditions of Sales

## 3. Price, invoicing and payment

3.1 Prices are given in the orders corresponding to each Product sold on a unit basis or corresponding to annual subscriptions. They are expressed to be inclusive of all taxes. The prices may be reevaluated from time to time. The effective price is deemed to be the one applicable at the time of the order.

3.2 Payments due by the Buyer shall be sent by cheque payable to Knowmade, PayPal or by electronic transfer to the following account:

Banque populaire St Laurent du Var CAP 3000 - Quartier du lac- 06700 St Laurent du Var

BIC or SWIFT code: CCBPFRPPNCE

IBAN: : FR76 1560 7000 6360 6214 5695 126

To ensure the payments, the Seller reserves the right to request down payments from the Buyer. In this case, the need of down payments will be mentioned on the order.

3.3 Payment is due by the Buyer to the Seller within 30 days from invoice date, except in the case of a particular written agreement. If the Buyer fails to pay within this time and fails to contact the Seller, the latter shall be entitled to invoice interest in arrears based on the annual rate Refi of the «BCE» + 7 points, in accordance with article L. 441-6 of the French Commercial Code. Our publications (report, database, tool...) are delivered only after reception of the payment.

3.4 In the event of termination of the contract, or of misconduct, during the contract, the Seller will have the right to invoice at the stage in progress, and to take legal action for damages.

## 4. Liabilities

4.1 The Buyer or any other individual or legal person acting on its behalf, being a business user buying the Products for its business activities, shall be solely responsible for choosing the Products and for the use and interpretations he makes of the documents it purchases, of the results he obtains, and of the advice and acts it deduces thereof.

4.2 The Seller shall only be liable for (i) direct and (ii) foreseeable pecuniary loss, caused by the Products or arising from a material breach of this agreement

4.3 In no event shall the Seller be liable for:

a) damages of any kind, including without limitation, incidental or consequential damages (including, but not limited to, damages for loss of profits, business interruption and loss of programs or information) arising out of the use of or inability to use the Seller's website or the Products, or any information provided on the website, or in the Products;

b) any claim attributable to errors, omissions or other inaccuracies in the Product or interpretations thereof.

4.4 All the information contained in the Products has been obtained from sources believed to be reliable. The Seller does not warrant the accuracy, completeness adequacy or reliability of such information, which cannot be guaranteed to be free from errors.

4.5 All the Products that the Seller sells may, upon prior notice to the Buyer from time to time be modified by or substituted with similar Products meeting the needs of the Buyer. This modification shall not lead to the liability of the Seller, provided that the Seller ensures the substituted Product is similar to the Product initially ordered.

4.6 In the case where, after inspection, it is acknowledged that the Products contain defects, the Seller undertakes to replace the defective products as far as the supplies allow and without indemnities or compensation of any kind for labor costs, delays, loss caused or any other reason. The replacement is guaranteed for a maximum of two months starting from the delivery date. Any replacement is excluded for any event as set out in article 5 below.

4.7 The deadlines that the Seller is asked to state for the mailing of the Products are given for information only and are not guaranteed. If such deadlines are not met, it shall not lead to any damages or cancellation of the orders, except for non-acceptable delays exceeding [4] months from the stated deadline, without information from the Seller. In such case only, the Buyer shall be entitled to ask for a reimbursement of its first down payment to the exclusion of any further damages.

4.8 The Seller does not make any warranties, express or implied, including, without limitation, those of saleability and fitness for a particular purpose, with respect to the Products. Although the Seller shall take reasonable steps to screen Products for infection of viruses, worms, Trojan horses or other codes containing contaminating or destructive properties before making the Products available, the Seller cannot guarantee that any Product will be free from infection.

## 5. Force majeure

The Seller shall not be liable for any delay in performance directly or indirectly caused by or resulting from acts of nature, fire, flood, accident, riot, war, government intervention, embargoes, strikes, labor difficulties, equipment failure, late deliveries by suppliers or other difficulties which are beyond the control, and not the fault of the Seller.

# Terms and Conditions of Sales

## 6. Protection of the Seller's IPR

6.1 All the IPR attached to the Products are and remain the property of the Seller and are protected under French and international copyright law and conventions.

6.2 The Buyer agreed not to disclose, copy, reproduce, redistribute, resell or publish the Product, or any part of it to any other party other than employees of its company. The Buyer shall have the right to use the Products solely for its own internal information purposes. In particular, the Buyer shall therefore not use the Product for purposes such as:

- Information storage and retrieval systems;
- Recordings and re-transmittals over any network (including any local area network);
- use in any timesharing, service bureau, bulletin board or similar arrangement or public display;
- Posting any Product to any other online service (including bulletin boards or the Internet);
- Licensing, leasing, selling, offering for sale or assigning the Product.

6.3 The Buyer shall be solely responsible towards the Seller of all infringements of this obligation, whether this infringement comes from its employees or any person to whom the Buyer has sent the Products and shall personally take care of any related proceedings, and the Buyer shall bear related financial consequences in their entirety.

6.4 The Buyer shall define within its company point of contact for the needs of the contract. This person will be the recipient of each new report in PDF format. This person shall also be responsible for respect of the copyrights and will guaranty that the Products are not disseminated out of the company.

## 7. Termination

7.1 If the Buyer cancels the order in whole or in part or postpones the date of mailing, the Buyer shall indemnify the Seller for the entire costs that have been incurred as at the date of notification by the Buyer of such delay or cancellation. This may also apply for any other direct or indirect consequential loss that may be borne by the Seller, following this decision.

7.2 In the event of breach by one Party under these conditions or the order, the non-breaching Party may send a notification to the other by recorded delivery letter upon which, after a period of thirty (30) days without solving the problem, the non-breaching Party shall be entitled to terminate all the pending orders, without being liable for any compensation.

## 8. Miscellaneous

All the provisions of these Terms and Conditions are for the benefit of the Seller itself, but also for its licensors, employees and agents. Each of them is entitled to assert and enforce those provisions against the Buyer.

Any notices under these Terms and Conditions shall be given in writing. They shall be effective upon receipt by the other Party.

The Seller may, from time to time, update these Terms and Conditions and the Buyer, is deemed to have accepted the latest version of these terms and conditions, provided they have been communicated to him in due time.

## 9. Governing law and jurisdiction

9.1 Any dispute arising out or linked to these Terms and Conditions or to any contract (orders) entered into in application of these Terms and Conditions shall be settled by the French Commercial Courts of Grasse, which shall have exclusive jurisdiction upon such issues.

9.2 French law shall govern the relation between the Buyer and the Seller, in accordance with these Terms and Conditions.





**2405 route des Dolines, 06902 Sophia Antipolis, France**

**Tel: +33 489 89 16 20**

**Web: <http://www.knowmade.com>**