



# A New Type of Report Providing a Clear Link between IP Situation and Market Evolutions

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More than describing the status of the IP situation, this report provides a missing link between patented technological solutions and market, technological and business trends

- Knowmade has developed a unique methodology to define a technical segmentation of patent landscape and identify key patents.
- By combining their technical knowledge, business understanding and patent search, Yole and Knowmade are able to provide unique analysis and added value in this report.
- In-depth technological analysis of patents provided in this report will lead to understanding of strategic decisions and positioning of key players within the value chain.

**Emerging MEMS Technology  
Analysis and Forecast**

**Emerging MEMS  
IP Landscape**



**Yole's Standard  
Reports:**

- Market Analysis
- Technology Analysis
- Tear down and reverse costing analysis

**Yole & Knowmade's New Reports:**

- Patent analysis
- Technological segmentations
- Identification of key patents
- Market implication of IP landscape
- Full searchable patent database

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# Scope of the Report

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- This report provides a detailed picture of the patent landscape for **Emerging MEMS (eMEMS)**. Only patents related to a selection of emerging MEMS were considered :

**AOC MEMS**

**Autofocus**

**Chemical Sensors**

**Micro-Speakers**

**Scanning Micro-Mirrors**

**Si Microfluidic**

**Ultrasonic MEMS**



This report does not include patents related to other emerging MEMS such as Switches, ID MEMS, Touch Screen, Energy Harvesting, Microdisplay, Micro Fuel Cells or Joysticks.

- This report covers patents published worldwide up to **June 2014**. More than **1,300 patent families** relevant to the scope of this report have been selected and analyzed. Those have been manually categorized by type of emerging MEMS.
- Market data from Yole Développement are also provided to add some context regarding business trends and metrics.

# Rationales for Choice

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- The 2013 “Emerging MEMS” Yole report focused on 12 different devices.
- Out the 12 devices, we have selected 7 of them as we believe they are devices that will find their marketplace:
  - AOC MEMS → after the telecom burst in the 2000s, photonics is the solution for future generation of data centers which are nowadays power-hungry with ever-increasing bandwidth.
  - Auto Focus → the market is requiring for thinner camera modules and MEMS could allow wafer level AF. Moreover, PZT thin films for actuation is gaining more interest for many MEMS applications including AF.
  - Chemical sensors → environmental / health applications are driving the developments of low cost MEMS sensors for gas sensing.
  - Micro speakers → R&D is very active at the moment with new partnerships with foundry partners from fabless companies developing micro speakers.
  - Scanning micro mirrors → after the “hype” in the 2008-2010 time period, many companies are pursuing development again for different applications, including HUDs for cars.
  - Si microfluidics → gene sequencing could be the next killer application.
  - Ultra-sonic MEMS → we estimate first products are close to be on the market (2016)
- We did not analyzed:
  - ID MEMS → we believe it will be for niche markets only.
  - Energy Harvesting → it is unlikely MEMS will be used for energy harvesters as power generation will be very low
  - Microdisplays → first MEMS-based displays have very low market success
  - Switches → very tiny market with only one player
  - Touch Screens → very early stage of development for MEMS
  - Micro fuel cells → it seems MEMS is definitively out of this business

# Key Features of the Report (1/2)

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- The report provides essential patent data, technology analysis and forecast for each type of selected **Emerging MEMS** (AOC MEMS, Autofocus, Chemical Sensors, Micro-Speakers, Scanning Micro-Mirrors, Si Microfluidic and Ultrasonic MEMS)
- It identifies more than 250 patent holders of Emerging MEMS related intellectual property. It provides in-depth analysis of key technology segments and key players including:
  - Time evolution of patent publications and countries of patent filings.
  - Ranking of main patent applicants.
  - IP collaboration network of main patent applicants.
  - Key patents.
  - Relative strength of main companies IP portfolio.
  - Main patented technologies of some companies.
- It provides an overview of the eMEMS technology and market trends.
- It presents the patents related to marketed products for some companies.

# Key Features of the Report (2/2)

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- The report also provides an extensive Excel database with all patents analyzed in the report with technology segmentation.

This database allows multi-criteria searches:

- ✓ Patent information
  - ✓ Patent publication number
  - ✓ Hyperlinks to the original documents
  - ✓ Priority date
  - ✓ Title
  - ✓ Abstract
  - ✓ Patent Assignees
  - ✓ Relevant/Related
  - ✓ 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 and Yole Développement are research firms 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.**

# Methodology (1/2)

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- The data were extracted from the FamPat worldwide database (Questel-ORBIT) which provides 80+ million patent documents from 95 offices.
- The patents search was performed in early June 2014, hence patents published after this date will not be available in this report.
- The patent selection is done both automatically and manually (search strategy detailed in next slides).

Number of selected patent families for the Emerging MEMS IP Investigation:  
1,300 over a number of returned results > 8,000

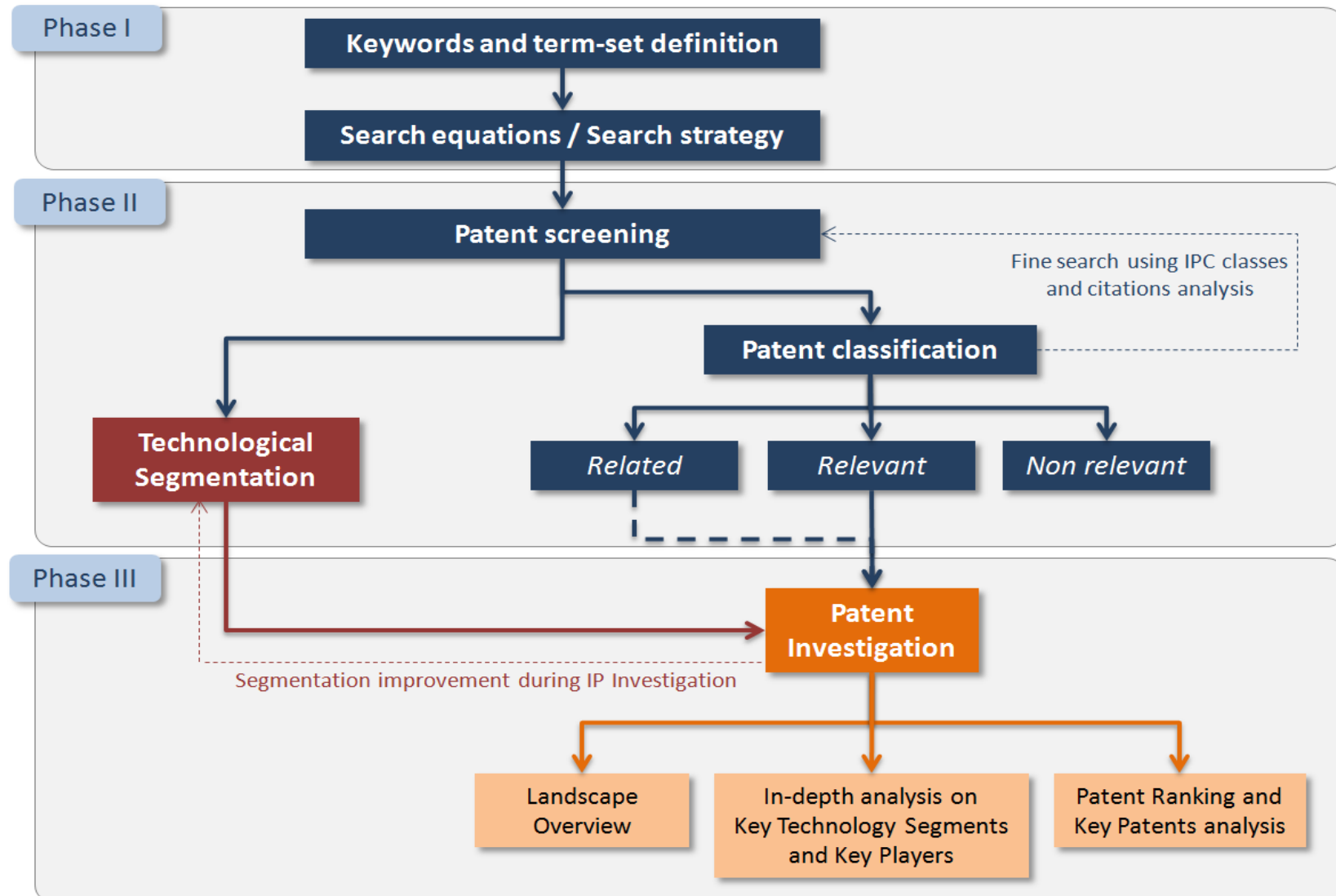
- The statistical analysis was performed with Questel IP Business Intelligence software.
- The patents were categorized using keyword analysis of patent title, abstract and claims, in conjunction with expert review of the subject-matter of inventions (details in next slides).
- The patents were organized according to 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 and Yole Développement 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.



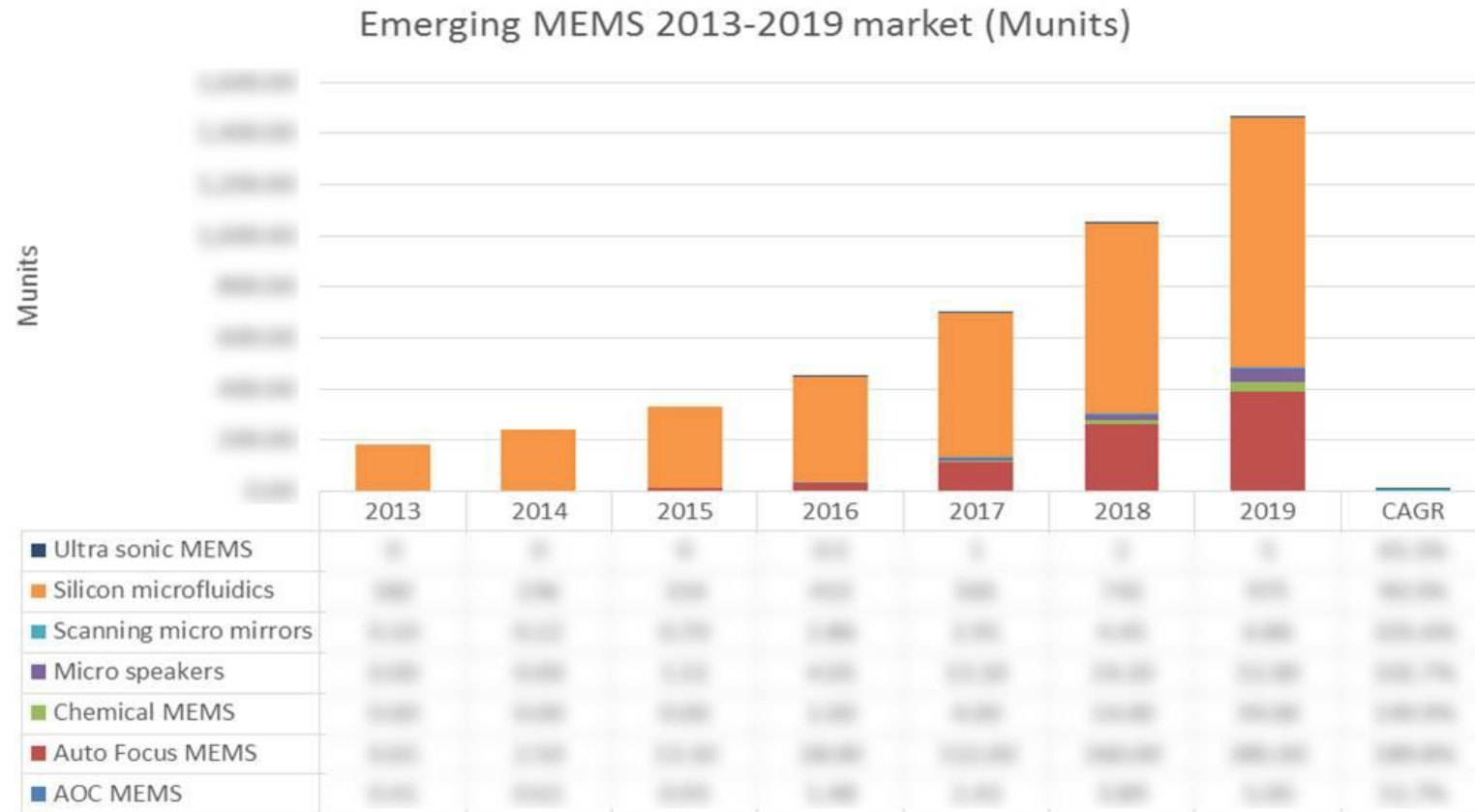
# Methodology (2/2)

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# Emerging MEMS market (Munits)

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- The market for emerging MEMS covered in this report will grow from XXMunits in 2013 to XXMunits in 2019.
- It is a XX% CAGR in volume.

# MEMS AutoFocus Overview

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- The growth of the Image Sensor market is accompanied by a need for additional features at the optical module level to provide functions such as autofocus, zoom and image stabilization.
- For a long time, the Voice Coil Motor technology ("VCM") has been the dominant technology for autofocus with ~95% market share today.
- However, new requirements for autofocus in terms of smaller size and more integrated device (smaller footprint, thinner, lower number of moving parts), low cost (<\$2), low power consumption & better Image quality are driving current developments for new (wafer-level) autofocus technologies.
- Today MEMS autofocus is still a hot topic specially for consumer applications: cell phones and tablets.
- There are currently 3 different companies developing MEMS-based solutions:
  - [REDACTED]
  - [REDACTED]
  - [REDACTED]
  - [REDACTED]
- However, 2013 [REDACTED] MEMS AF. In 2014, [REDACTED] has licensed MEMS AF Patents to [REDACTED]. In addition, [REDACTED] contemplates a patent license agreement related to MEMS and camera module technology, as well as a license agreement related to certain software features of [REDACTED]. [REDACTED] also contemplates that [REDACTED] will assume or sublease [REDACTED]' facility lease in Arcadia, California. Additionally, both [REDACTED] and [REDACTED] are working towards establishing a long-term collaborative relationship between the two companies. The total consideration for this transaction is \$ [REDACTED].

MEMS CAM from DOC



# Challenges for MEMS Micro-Speakers

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- One of the main market challenges is **the high cost of MEMS speakers** :
  - The speaker **is more expensive** than current mobile solutions, restricting their use in high-end phones.
  - The speaker cost is **higher than** solutions for TV applications. The MEMS speaker advantages for this application **are not enough**.
- Another challenge is the competition of **other technologies** :
  - Companies like **Apple** developed very slim speakers with high sound output for use in mobile phones.
  - Small form factor cannot be considered as **a major competitive advantage for MEMS speakers**.



Company X miniature speaker with 1W power handling, 94 dB maximum sound pressure and 11x15 mm dimensions  
Source: Company X

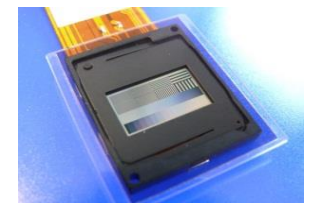
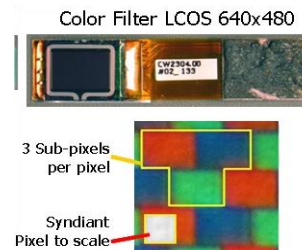
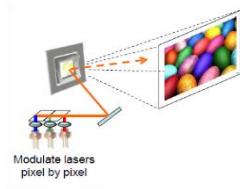
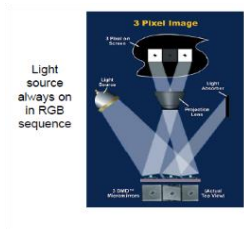
- An intrinsic advantage of MEMS devices is their ability to **integrate with other components**. But this becomes a drawback when you want to do **high performance and complex functions**.
- The main technical challenge for MEMS speaker is the **miniaturization**, the more difficult it is to create **smaller devices**.
- The result is that the device cannot be further reduced **without losing performance**. Otherwise the sound output **decreases**. This limits the possible cost **reduction** **by** die size.



# MEMS Micro-Mirrors (DLP, LBS) vs LCOS for Pico Projection

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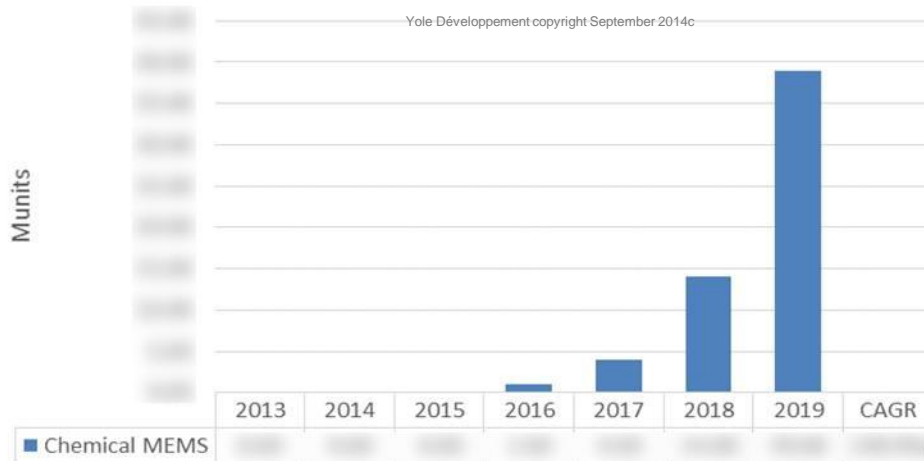
	DLP	LBS	LCOS Color Filter	LCOS Field Sequential
Light source	LEDs	Laser	LEDs	LEDs
Architecture	Mirror arrays	Single mirror – MEMS scans laser spot to form image Control individual laser power to mix color pixel by pixel level	Uses 3 sub-pixels for each pixel	Different colored light sources (LEDs or lasers) are turned on in rapid sequence to form a color image
Focus	Fixed focus	Fixed focus	Fixed focus	Fixed focus
Resolution	+	+	+	++
Color saturation	++	+++	-	++
Image quality	++	++	++	++
Power consumption	++	++	-	+
Size	+++	++	-	+
Cost	++	-	+++	++
Notes	<ul style="list-style-type: none"> <li>• DLP uses a single LED light source, which is turned on in rapid sequence to form a color image</li> <li>• DLP uses a single LED light source, which is turned on in rapid sequence to form a color image</li> <li>• DLP uses a single LED light source, which is turned on in rapid sequence to form a color image</li> <li>• DLP uses a single LED light source, which is turned on in rapid sequence to form a color image</li> </ul>	<ul style="list-style-type: none"> <li>• LBS uses a single laser light source, which is turned on in rapid sequence to form a color image</li> <li>• LBS uses a single laser light source, which is turned on in rapid sequence to form a color image</li> <li>• LBS uses a single laser light source, which is turned on in rapid sequence to form a color image</li> <li>• LBS uses a single laser light source, which is turned on in rapid sequence to form a color image</li> </ul>	<ul style="list-style-type: none"> <li>• LCOS Color Filter uses a single LED light source, which is turned on in rapid sequence to form a color image</li> <li>• LCOS Color Filter uses a single LED light source, which is turned on in rapid sequence to form a color image</li> <li>• LCOS Color Filter uses a single LED light source, which is turned on in rapid sequence to form a color image</li> <li>• LCOS Color Filter uses a single LED light source, which is turned on in rapid sequence to form a color image</li> </ul>	<ul style="list-style-type: none"> <li>• LCOS Field Sequential uses a single LED light source, which is turned on in rapid sequence to form a color image</li> <li>• LCOS Field Sequential uses a single LED light source, which is turned on in rapid sequence to form a color image</li> <li>• LCOS Field Sequential uses a single LED light source, which is turned on in rapid sequence to form a color image</li> <li>• LCOS Field Sequential uses a single LED light source, which is turned on in rapid sequence to form a color image</li> </ul>



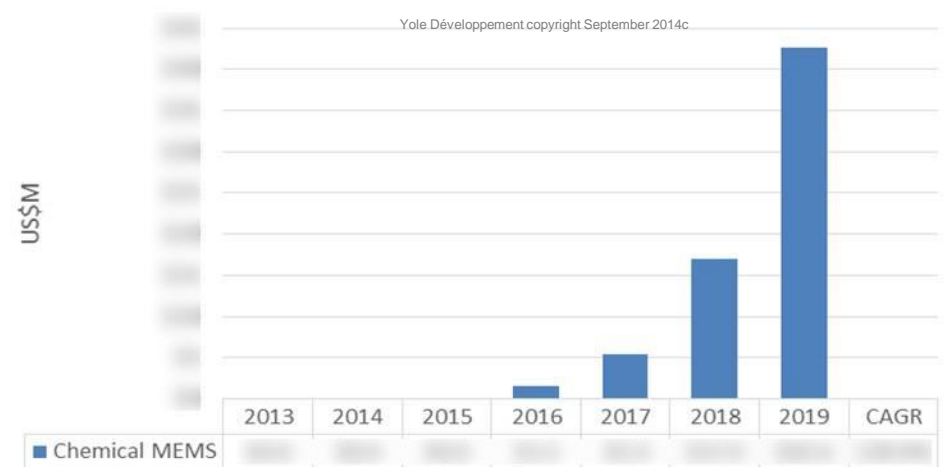
# 2013-2019 Market for MEMS Chemical Sensors

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Chemical MEMS 2013-2019 market (Munits)



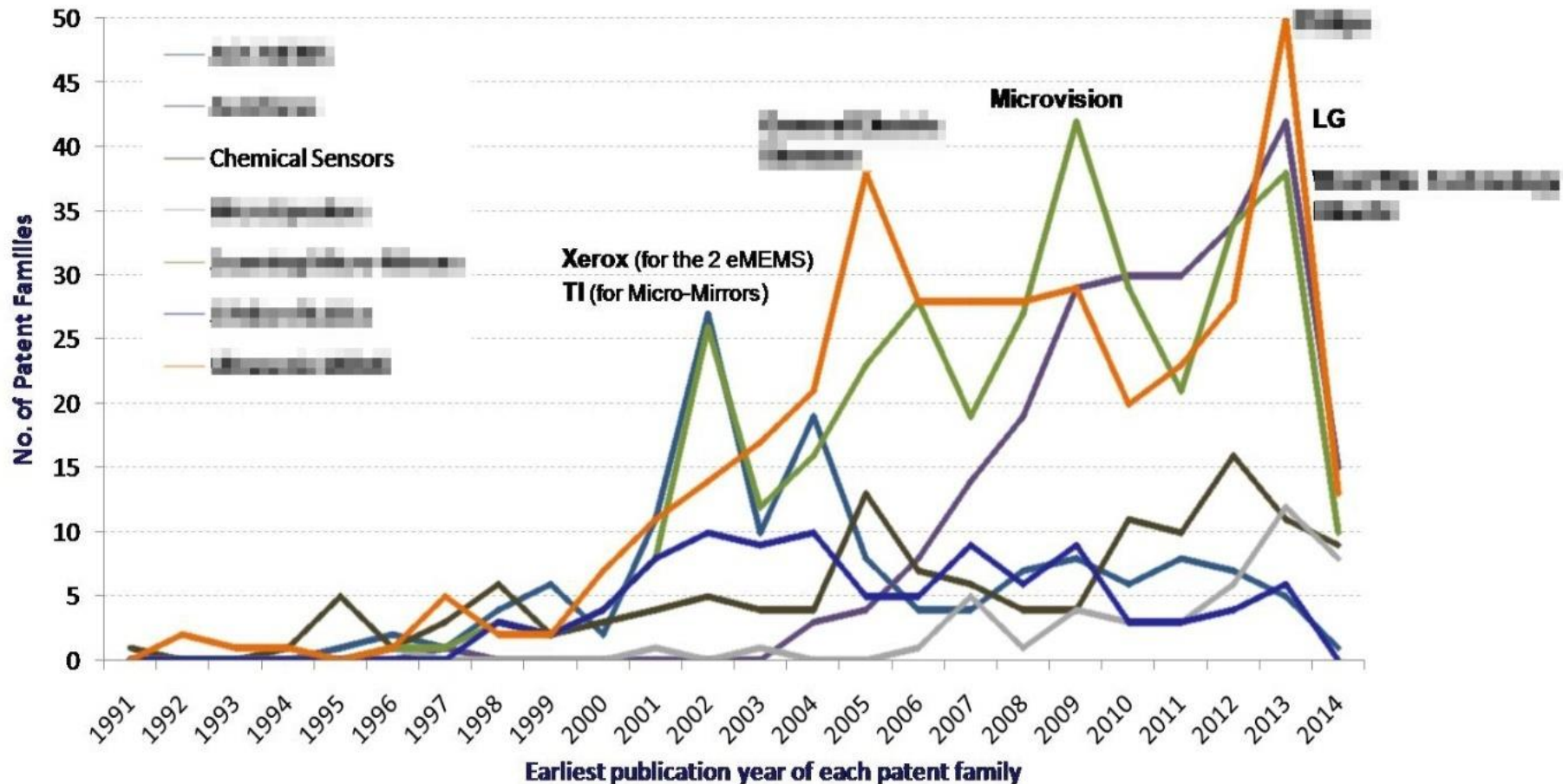
Chemical MEMS 2013-2019 market (US\$M)



- Gas MEMS market will grow from [redacted] units in 2016 (\$ [redacted]) to [redacted] in 2019 (~\$ [redacted]).
- A strong penetration of MEMS-based chemical sensors is expected in 20 [redacted] + for [redacted].
- Industrial applications will start using MEMS-based sensors for [redacted] after 20 [redacted] but strong growth in this market is expected after 20 [redacted], once [redacted] have matured.
- MEMS-based chemical sensors have strong, long term potential due to [redacted].

# Time Evolution of Patent Publications for Emerging MEMS

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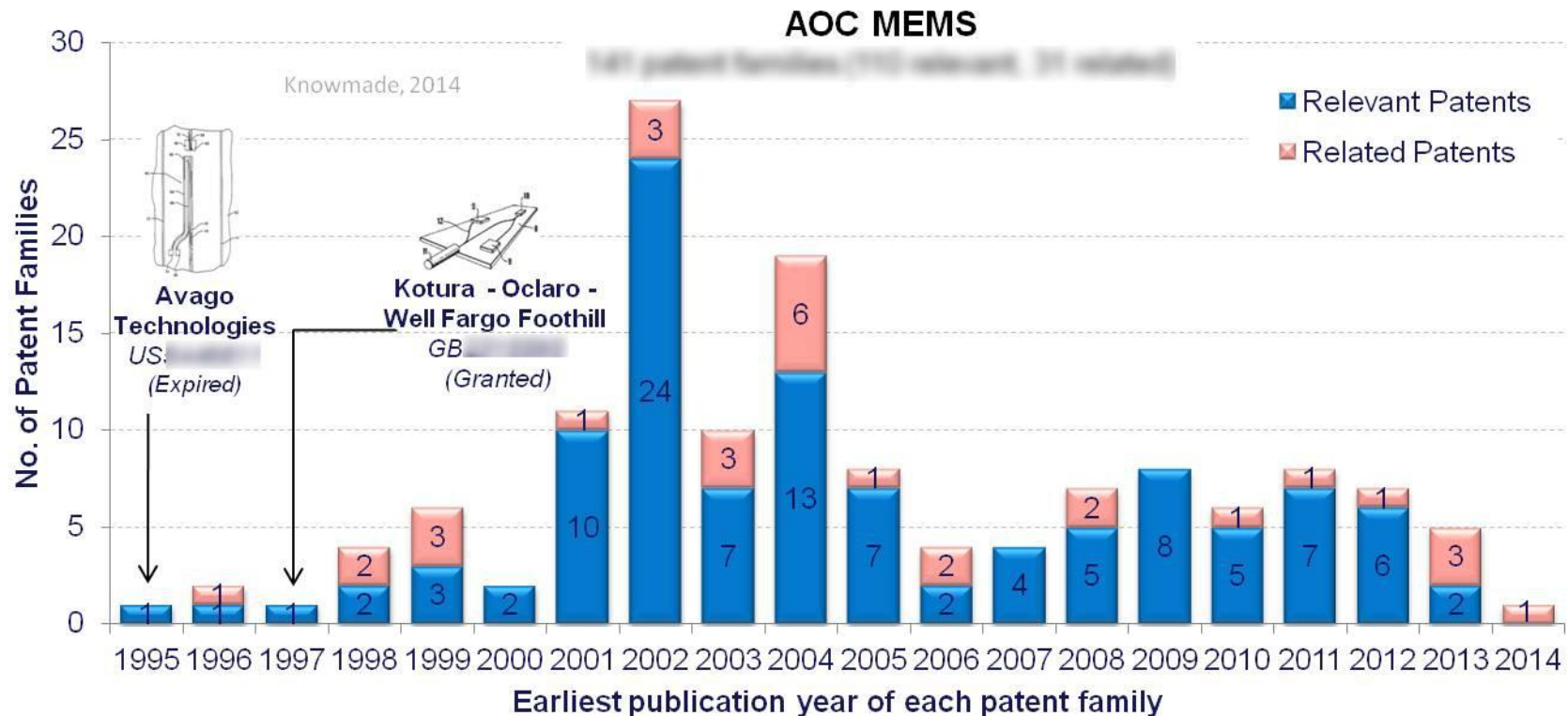


- Patent applications on Emerging MEMS have begun in the 1990s.
- The publications of patents related to **Ultrasonic MEMS**, **Scanning Micro-Mirrors** and **Autofocus** technologies are taking off since mid-2000s.

# Time Evolution of Patent Publications

## AOC MEMS

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*Note: The data corresponding to the year 2014 are not complete since the patent search was done in early June 2014.*

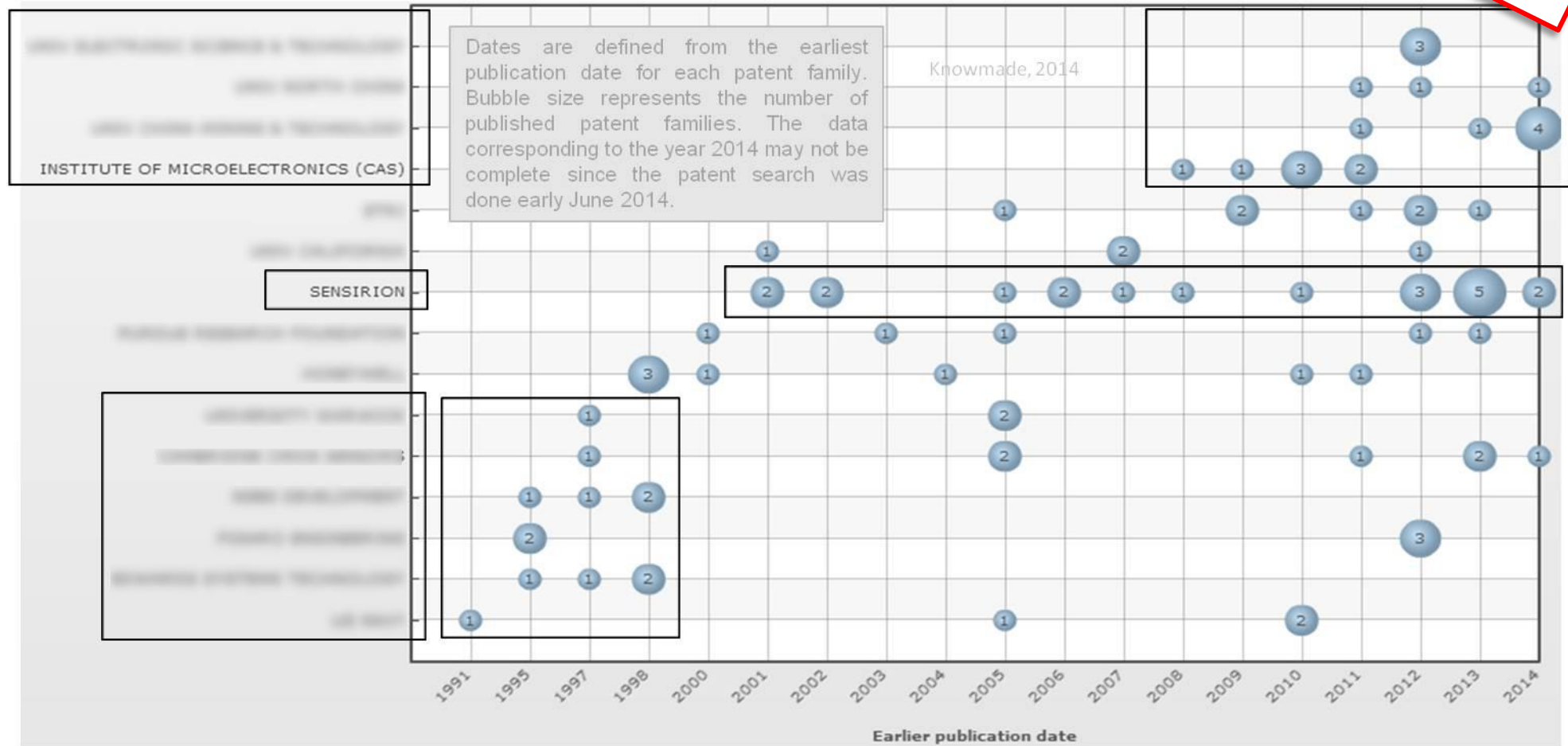
- Mid-1990s, **Hewlett Packard** and **Avago Technologies** filed first patents on switching device for fiber optic transmission system (USXXXXXX) and optical fiber alignment (USXXXXXX). Since then, more than **100 relevant patent families** have been published.
- More than 50% of patent families were published between 2001 and 2005, and the number of new patent applications is stable since then.



# Time Evolution of Patent Applicants

## *MEMS Chemical Sensors*

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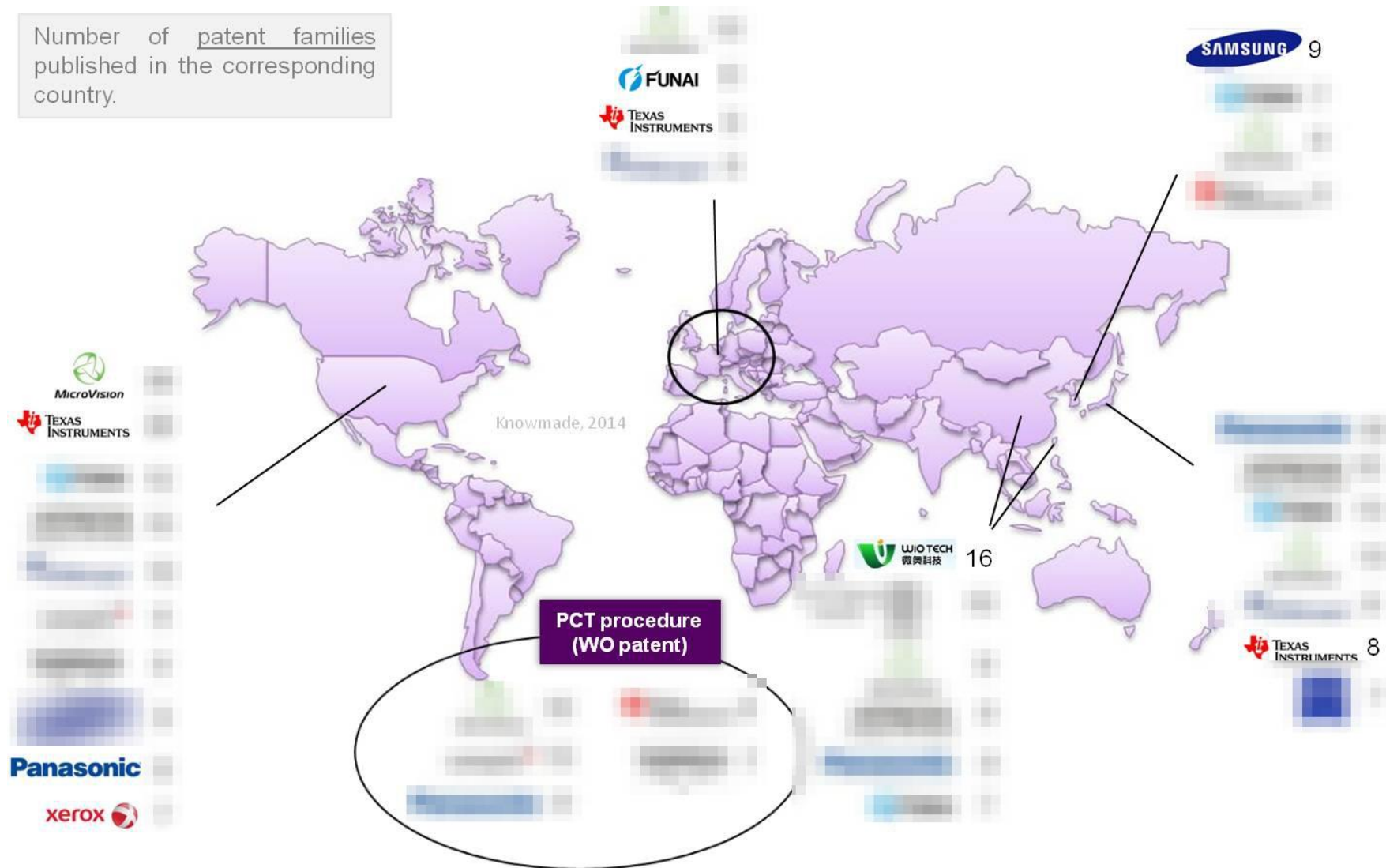


- The patenting activity of **Sensirion** began in early-2000s and it increased these last 2 years.
- Early players are not active anymore except **Company X** and **Company Y**.
- **XXXXXXXXX** emerged in the MEMS-based Chemical Sensors patent landscape since the end-2000s.

# Country of Filing for Patent Applicants MEMS Scanning Micro-Mirrors

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Number of patent families  
published in the corresponding  
country.



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[illegible]

## A red rectangular stamp with a double border, tilted at an angle, containing the words "REPORT" and "SAMPLE" in bold, red, sans-serif capital letters.

- 
- The diagram illustrates a network of entities and their relationships, centered around the 'Knowmade, 2014' project. The entities are represented by blue circles, and the relationships are shown as lines connecting them. Green numbers in circles indicate the degree of each node (the number of connections it has).
- US NAVY** (Degree 7) is connected to a central node (Degree 22) and a node labeled 'US' (Degree 7). The central node is connected to 'US NIH' (Degree 13) and a node labeled 'US' (Degree 5). 'US NIH' is connected to a node labeled 'US' (Degree 7) and a node labeled 'US' (Degree 2). The node labeled 'US' (Degree 2) is connected to 'US GOVERNMENT ARMY' (Degree 5). 'US GOVERNMENT ARMY' is connected to a node labeled 'US' (Degree 21). The node labeled 'US' (Degree 21) is connected to a node labeled 'US' (Degree 5). The node labeled 'US' (Degree 5) is connected to 'US NIH' (Degree 13).
  - TRS TECHNOLOGIES** (Degree 2) is connected to a node labeled 'US' (Degree 1) and a node labeled 'US' (Degree 4). The node labeled 'US' (Degree 1) is connected to 'US GOVERNMENT ARMY' (Degree 5). The node labeled 'US' (Degree 4) is connected to 'US GOVERNMENT ARMY' (Degree 5).
  - SIEMENS** (Degree 2) is connected to a node labeled 'US' (Degree 2) and a node labeled 'US' (Degree 1). The node labeled 'US' (Degree 2) is connected to 'US GOVERNMENT ARMY' (Degree 5). The node labeled 'US' (Degree 1) is connected to 'US GOVERNMENT ARMY' (Degree 5).
  - INFINEON TECHNOLOGIES** (Degree 1) is connected to a node labeled 'US' (Degree 1). The node labeled 'US' (Degree 1) is connected to 'US GOVERNMENT ARMY' (Degree 5).
- Additional information provided in the diagram includes:
- US NAVY**: Rights acquired by US Navy.
  - US NIH**: Rights acquired by NIH in 2013.
  - US GOVERNMENT ARMY**: Rights acquired by US Government Army.
  - TRS TECHNOLOGIES**: Rights acquired by TRS Technologies in 2009.
  - SIEMENS**: Acquired by Siemens in 2005.
  - INFINEON TECHNOLOGIES**: Spin off of Siemens in 1999.



# Summary of Applicant's Patent Portfolio

## *MEMS Auto-Focus*

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Patent Applicants	No. of patent families	Oldest priority date of the patent portfolio	No. of patent families filed / yr (average)	No. of patents documents	No. of patents / Patent family (average)	Patents average age (Y)	% granted	% pending	% dead revoked lapsed expired	No. of alive patents / family (granted, pending)	No. of granted patents by country				
											US	EP	JP	CN/TW/HK	KR
Company 1	37	15/05/2008	6.0	77	2	1	14%	83%	3%	2.0	1				9
Company 2	29	01/09/2005	3.3	116	4	1	31%	51%	18%	3.3	32		1	1	2
Company 3	23	15/03/2004	2.2	67	3	3	43%	24%	33%	2.0	8	5	4	1	
Company 4	12	25/02/2009	2.2	18	2	2	0%	89%	11%	1.3					
Company 5	8	19/02/2004	0.8	35	4	5	34%	20%	46%	2.4	2		1	1	6
Company 6	7	01/09/2005	0.8	7	1	5	14%	14%	71%	0.3					
Company 7	6	19/07/2007	0.9	28	5	3	61%	39%	0%	4.7	4	3	3		
Company 8	5	05/10/2007	0.7	14	3	2	57%	43%	0%	2.8	2	1	2	2	
Company 9	3	29/09/2006	0.4	21	7	5	43%	10%	48%	3.7	2	1	1		

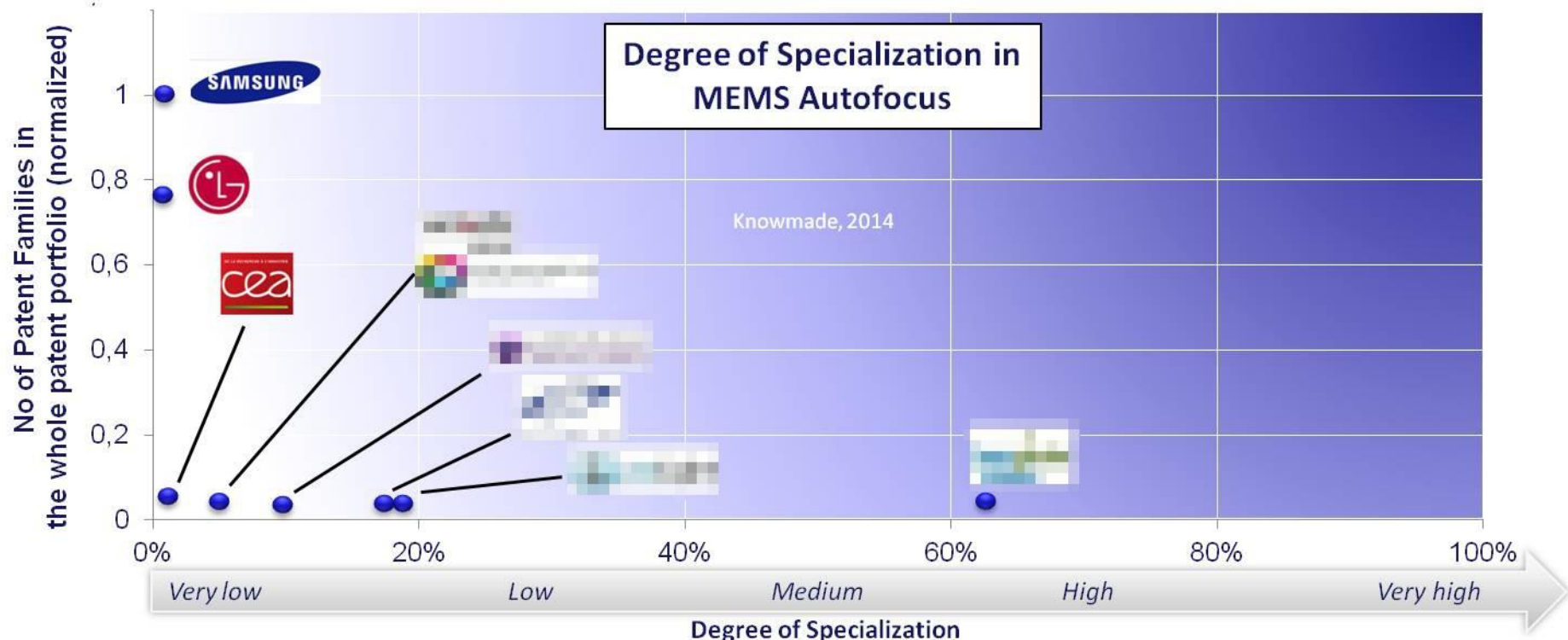
■ : highest value in column

■ : lowest value in column

# Degree of Specialization

## MEMS Auto-Focus

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The specialization degree of a company represents the percentage of patents filed in a specific field over the whole patent portfolio of the company. It is an indicator of the patenting activity on a specific field.

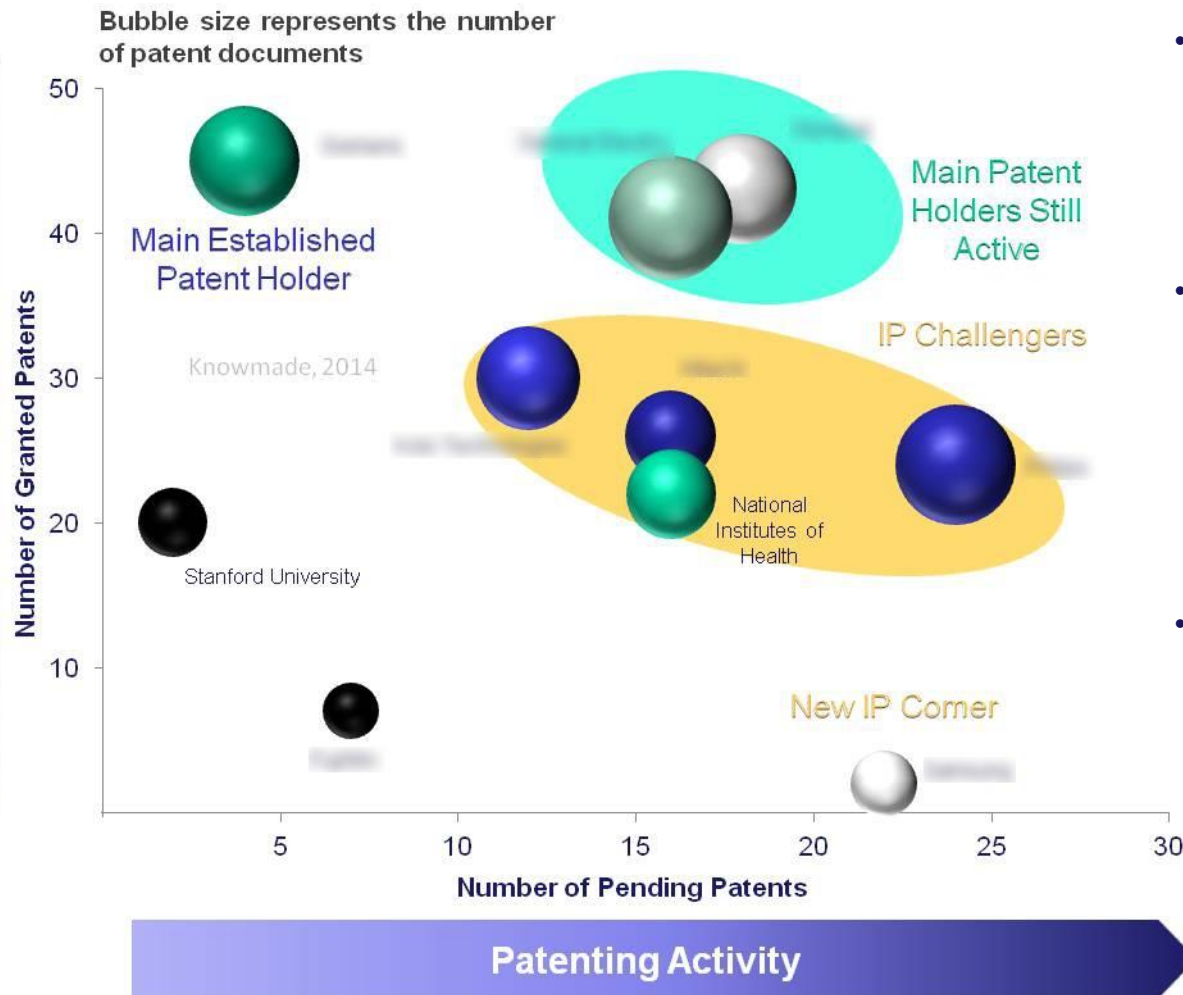
- More than 60% of **Company X**'s patents focus on MEMS Autofocus, reflecting a high degree of IP specialization in this field.
- **Company Y** and **Company Z** (acquired by **XXXXXX** in 2010) show a non-negligible degree of specialization in MEMS Autofocus.

# Leadership of Patent Applicants

## Ultrasonic MEMS

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Patent Rights Reinforcement



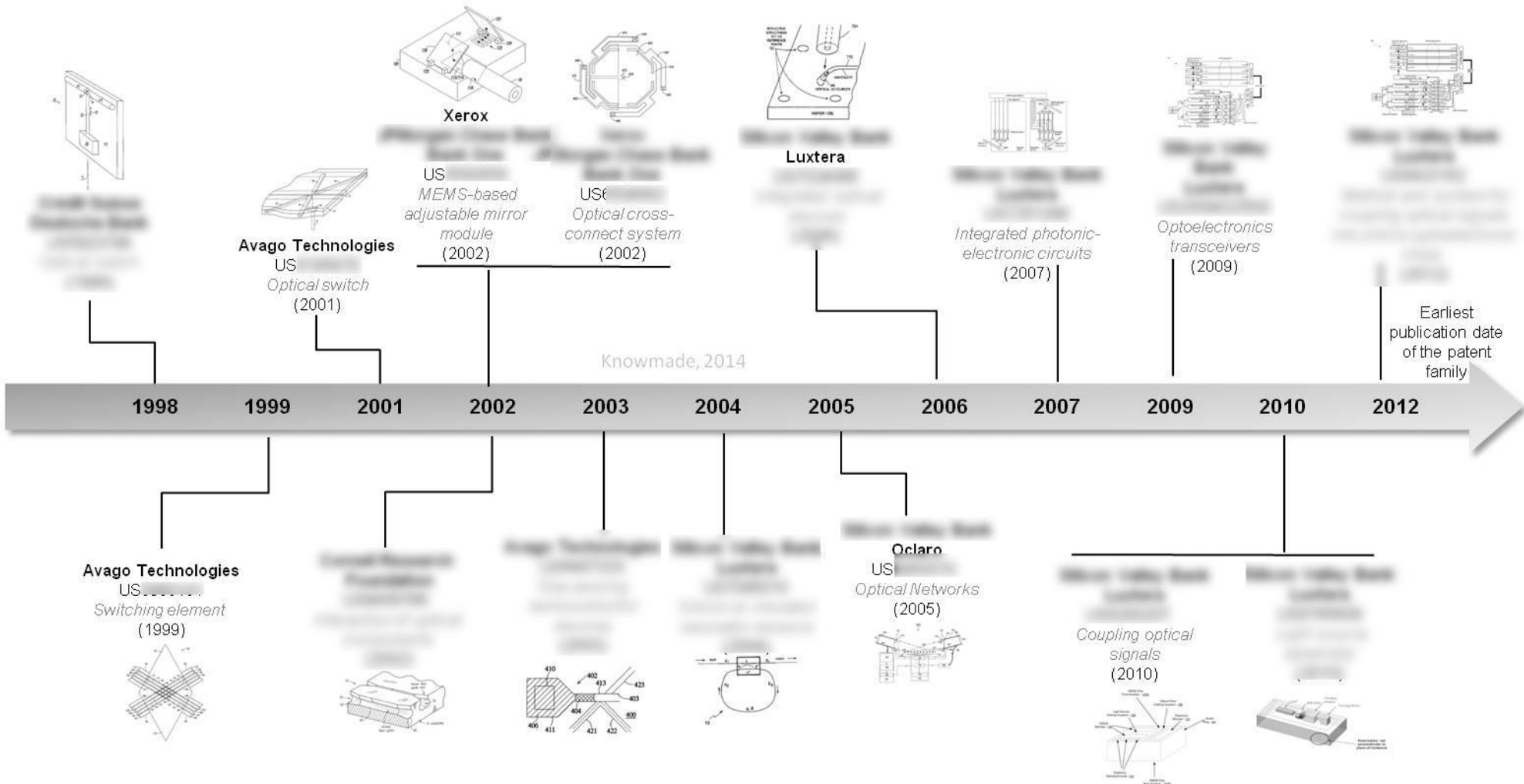
- **Company X** is the main established patent holder in Ultrasonic MEMS with 45 granted patents and only 4 pending patents. It has been less active since 2010.
- **Company Y** and **Company Z** own a high number of granted patents related to Ultrasonic MEMS (43 and 41 patents respectively), mainly in force in Japan and USA, and they are still active with 18 and 16 pending patent applications respectively.
- **Company A**, **Company B**, **Company C** and **National Institutes of Health (NIH)** are becoming major forces in the Ultrasonic MEMS IP landscape with already a lot of granted patents and a significant number of pending patents. **Company D** follows them closely behind.

# Key Patent Families

## AOC MEMS

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The selection of key patent families is based on the **family size**, current **legal status** of patents, **citations** analysis and **impact on AOC MEMS** technologies.



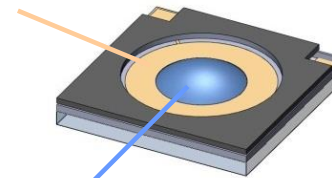


# MEMS AutoFocus Wavelens / CEA (FR)

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- **Wavelens** autofocus is a variable focus lens, manufactured with a combination of MEMS & LCD technologies. The lens is made of a flexible membrane that encases optical oil in a cavity created on a glass wafer. MEMS actuators located at the membrane periphery push the liquid towards the center of the lens changing the curvature of the membrane, resulting in a changed focal length.
- It is a driver-less architecture (low V actuation), very compact/low cost and low power consumption.

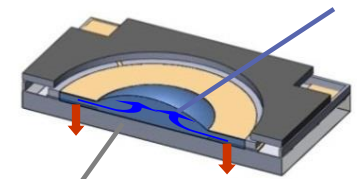
MEMS Actuators



Flexible membrane

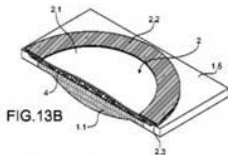
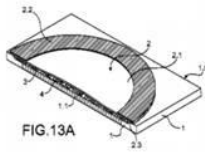
Source Wavelens

Optical oil



Glass substrate

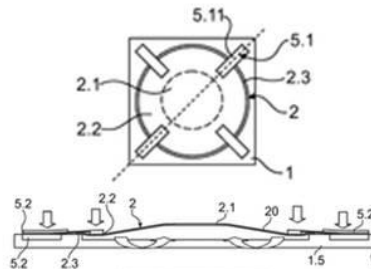
## Corresponding main patented technologies



WO  
WO

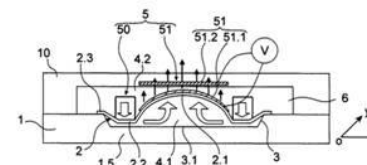
Optical device with  
deformable membrane

07-2007



(Granted Patent)

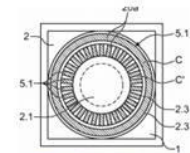
04-2008



EP  
(Granted Patent)

Membrane deformable  
optical device enclosing a  
fluid

11-2008



FR  
FR  
(Granted Patents)

09-2009

Earliest priority date of the patent family

# MEMS-based Scanning Micro-Mirrors Texas Instruments (USA)

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In early 2011, Texas Instruments launched its 3<sup>rd</sup> generation of DMD chipset for pico projection systems : DLP Pico HD (nHD)

- 2 specifications are proposed
  - VGA devices optimized for digital camera & camcorder formats (640x480, 4x3 aspect ratio,)
  - WVGA devices optimized for mobile phone displayed formats (854x480, 16x9 aspect ratio)
- Higher integration is achieved

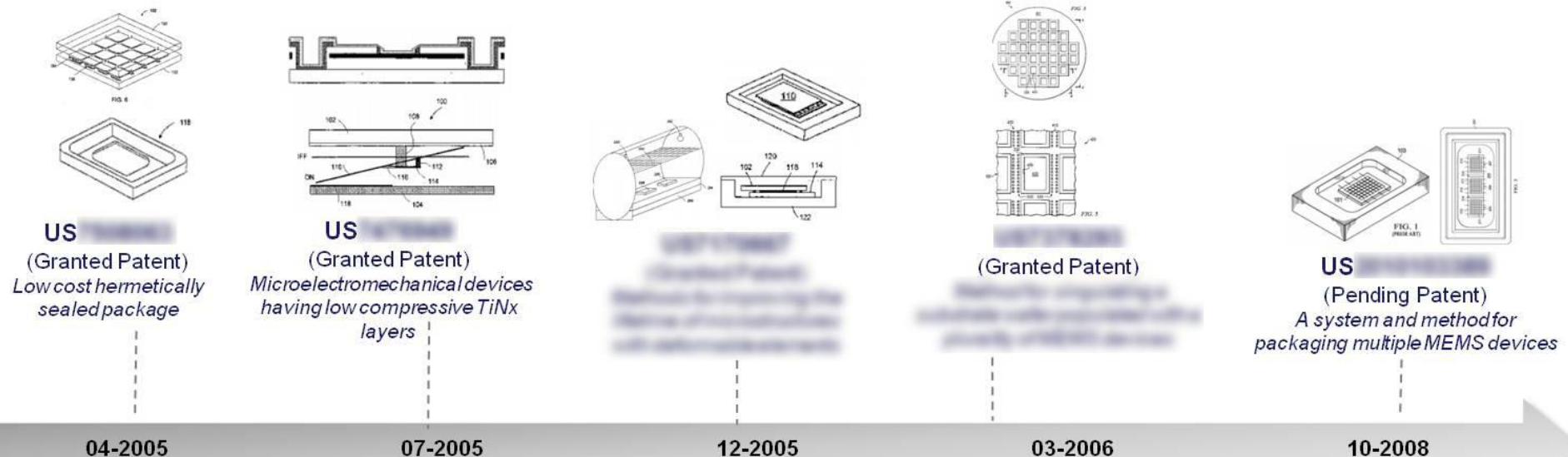


DLP Pico Gen 3  
Pico HD Chipset compare to long rice  
Source TI



DLP Pico Gen 1 & 2  
Source TI

## Corresponding main patented technologies



Earliest priority date of the patent family

# 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.

Patent Number	Patent number	Hyperlink to original document	Earliest priority date of the family (YYYY-MM-DD)	Title	Abstract	Assignee	AOC MEMS		Autofocus		Chemical Sensors		MicroSpeakers	
							Relevant	Related	Relevant	Related	Relevant	Related	Relevant	Related
75	JP2012045659	<a href="#">JP2012045659 A</a>	2010-08-26	Method of	PROBLEM TO BE	YAMAHA CORP;								x
90	JP2012042228	<a href="#">JP2012042228 A</a>	2010-08-12	Minute electrical	PROBLEM TO BE	HITACHI								
90	US20120038963	<a href="#">US2012038963 A1</a>	2010-08-12	MEMS device	A protrusion	HITACHI								
77	WO201220212	<a href="#">WO2012020212</a>	2010-08-09	Camera	In a camera	CAMBRIDGE				x				
77	GB201302771	<a href="#">GB201302771 D0</a>	2010-08-09	Camera	In a camera	CAMBRIDGE				x				
77	CN103168264	<a href="#">CN103168264 A</a>	2010-08-09	Camera	In a camera	CAMBRIDGE				x				
77	US20130222685	<a href="#">US2013222685 A1</a>	2010-08-09	Camera	In a camera	CAMBRIDGE				x				
77	KR20130108283	<a href="#">KR20130108283 A</a>	2010-08-09	Camera	In a camera	CAMBRIDGE				x				
23	WO201221420	<a href="#">WO2012021420</a>	2010-08-09	Mems gas sensor	Systems and	QUALCOMM					x			
23	US20120032692	<a href="#">US2012032692 A1</a>	2010-08-09	Mems gas sensor	Systems and	QUALCOMM					x			
87	US20120057607	<a href="#">US2012057607 A1</a>	2010-08-06	Broad area laser	Multiple broad	EAST WEST BANK	x							
60	US20120032875	<a href="#">US2012032875 A1</a>	2010-08-05	Scanned Image	An imaging	MICROVISION								
76	WO201218886	<a href="#">WO2012018886</a>	2010-08-05	Method of	A system and	HOSPIRA ([US])								
76	CA2806586	<a href="#">CA2806586 A1</a>	2010-08-05	Method of	A system and	HOSPIRA ([US])								
76	US20120035535	<a href="#">US2012035535 A1</a>	2010-08-05	Method of	A system and	HOSPIRA								
76	AU2011285759	<a href="#">AU2011285759</a>	2010-08-05	Method of	A system and	HOSPIRA								
76	EP2601483	<a href="#">EP2601483 A1</a>	2010-08-05	Method of	A system and	HOSPIRA ([US])								
10	WO201215596	<a href="#">WO2012015596</a>	2010-07-30	Optical package	An optical	CORNING ([US])	x							
86	US20120081598	<a href="#">US2012081598 A1</a>	2010-07-29	Mems actuator	A method for	DIGITALOPTICS				x				
05	WO201214690	<a href="#">WO2012014690</a>	2010-07-29	Projector	Provided is a	FUNAI ELECTRIC								

# Order Form

## Emerging MEMS Patent Investigation

### 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

#### 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, BP 65  
06902 Valbonne Sophia Antipolis  
FRANCE

#### Bank 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

☐ €5,990 – Corporate license

☐ €3,990 – One user 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.

*\*One 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.