



FAST Search & Transfer

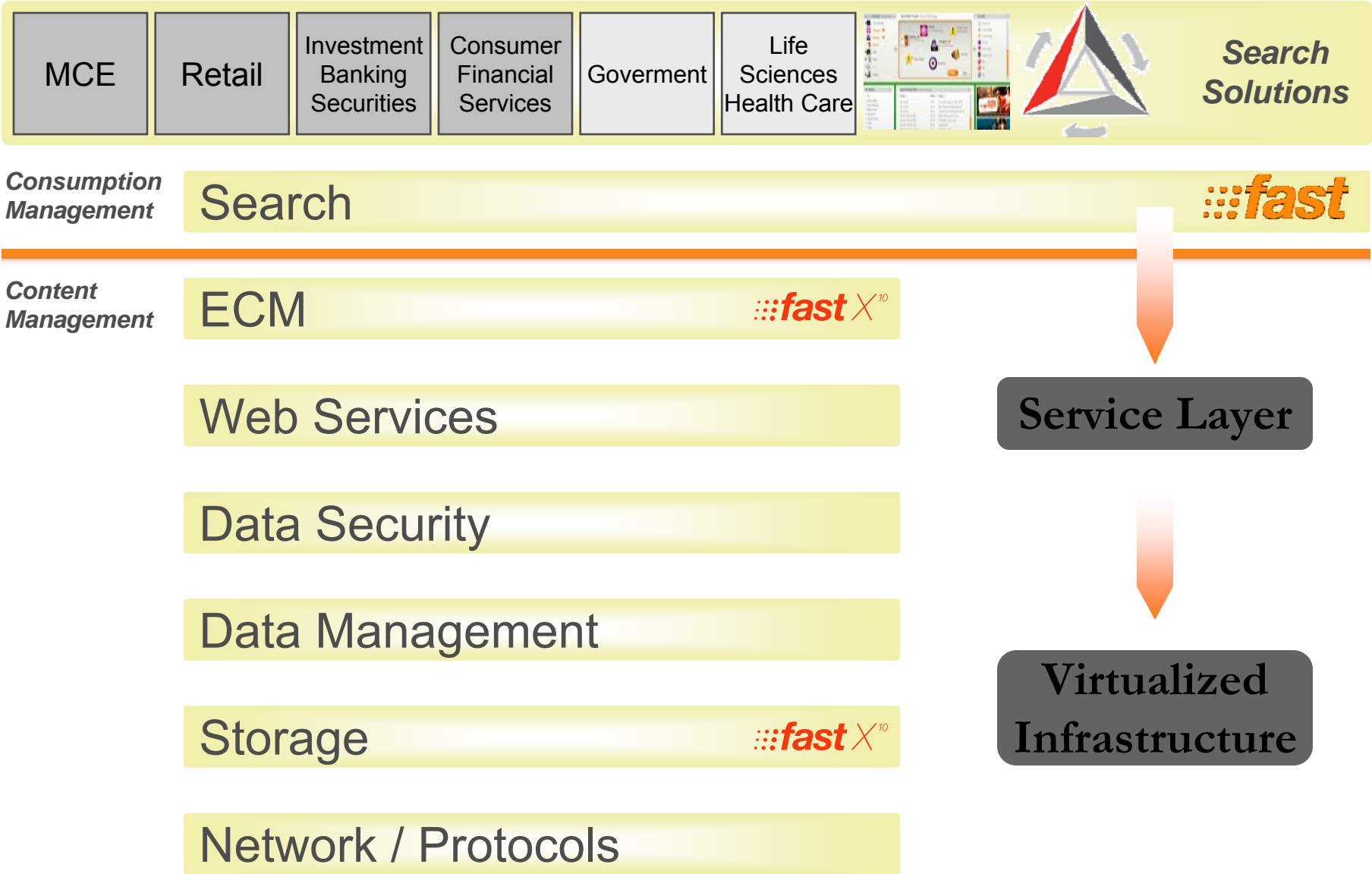
Visiting CERN

Taking Search further

Today's agenda

- Information discovery and metadata extraction for scientific documents
- Data Cleansing
- Ad hoc analysis and visualization. Use cases: CERN administration, CDS, EDMS
- Processing and search solutions for complex structured data
- Extreme scalability

The Emerging "OSI Layer Model"



The Shift that follows

6 “I hope someone like it...”

5 How to hard-wire services in portal?

4 How to expose services?

3 What type of relevant analysis?

2 How do I store and manage content?

1 What content do I have?

Content
fast



Users



1 Who are my users?

2 What “jobs” do I serve?

3 Key user and business drivers?

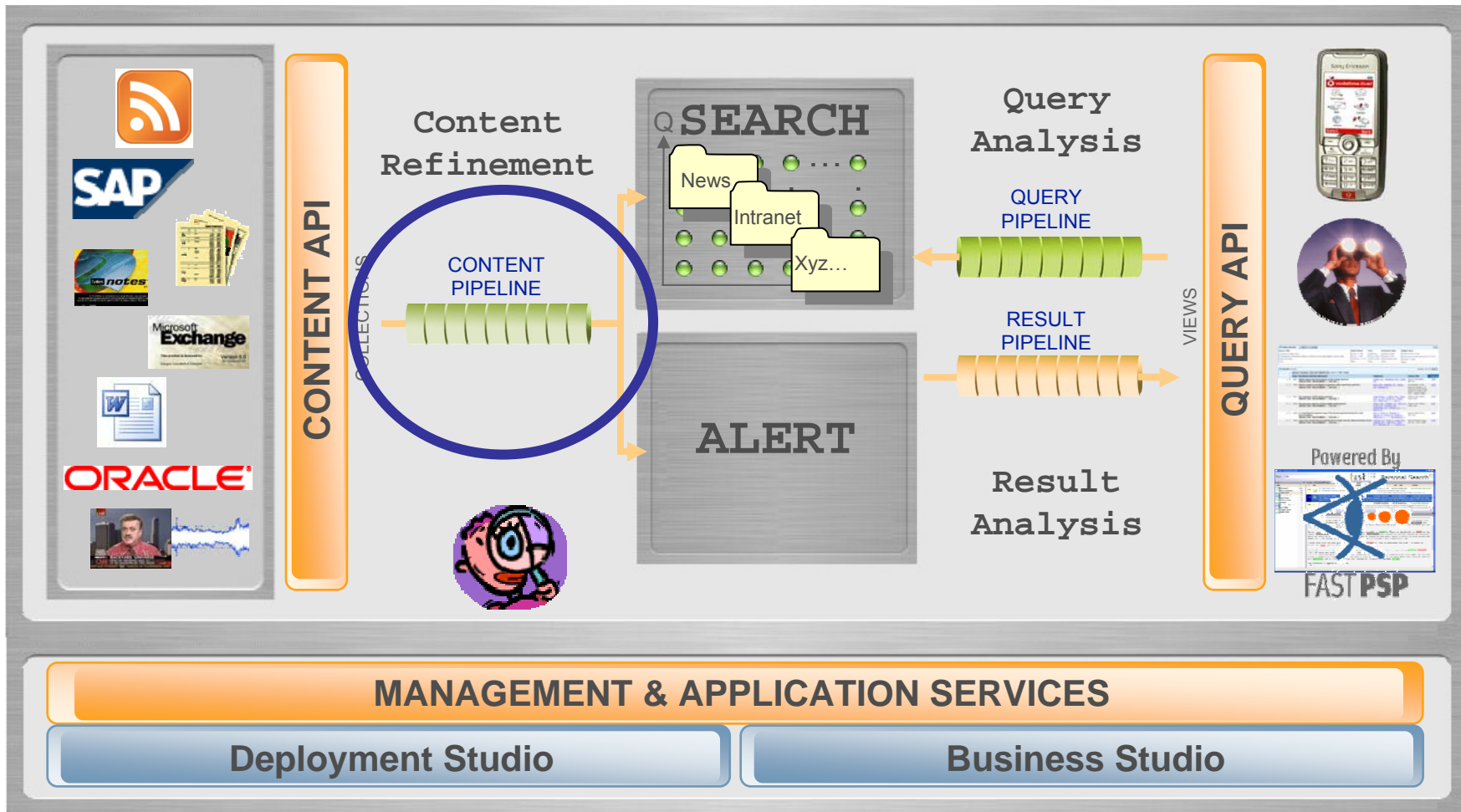
4 How to build uniqueness?

5 What are enabling content & services?

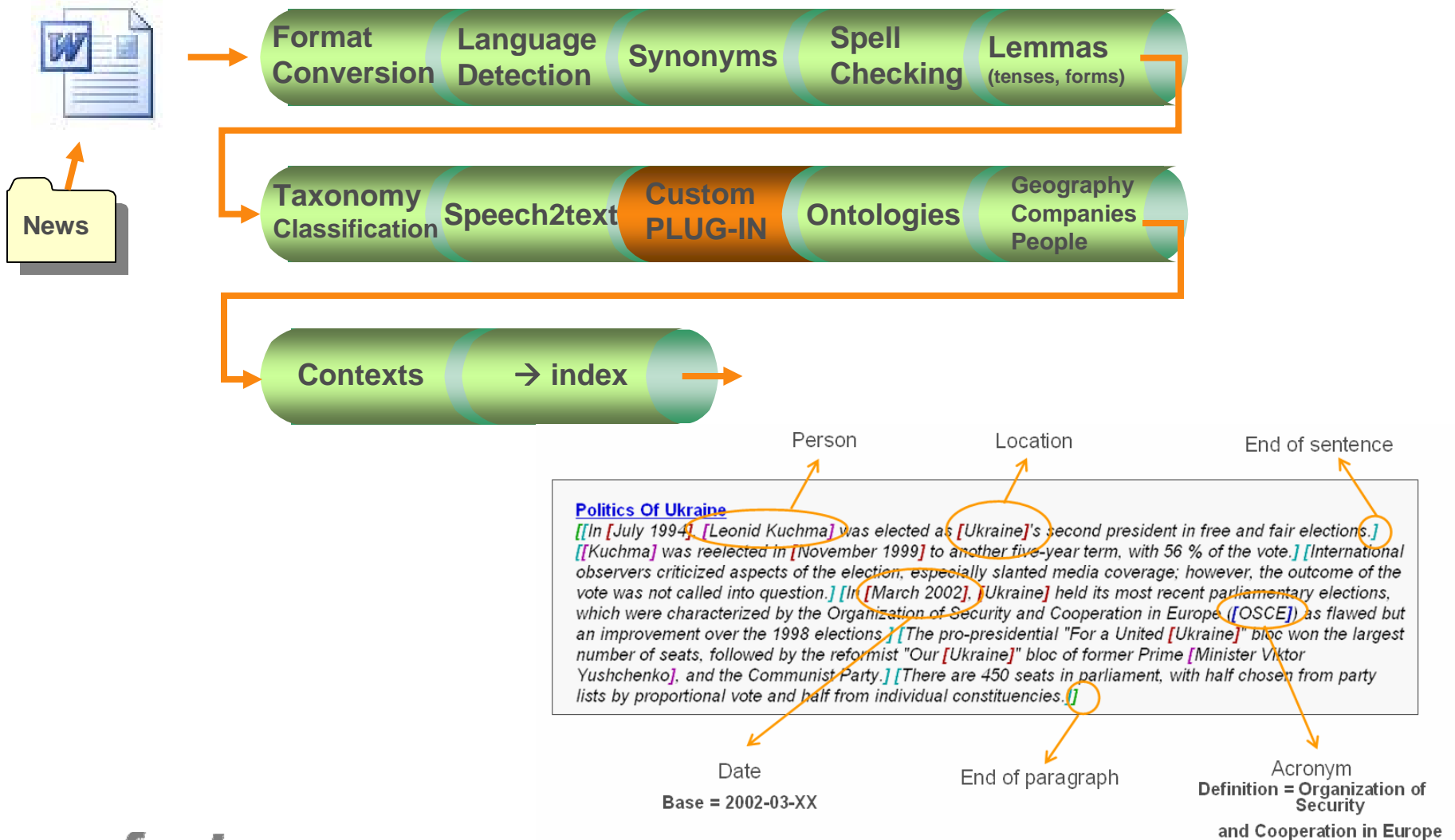
6 Content refinement advantages?

fast

FAST ESP Architecture



The Data processing Pipeline; Real-Time Content Refinement



Information Discovery

Example: scirus.com from Reed Elsevier



SCIRUS
for scientific information only

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Basic Search

[Advanced Search](#) [Search Preferences](#)

einstein big bang

Search

All journal sources All Web sources Exact phrase

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Basic Search

[Advanced Search](#) [Search Preferences](#)

einstein big bang

Search

All journal sources All Web sources Exact phrase

Searched for:	All of the words (einstein AND big AND bang) AND ("gamma ray burst")
Found:	621 total 5 journal results 616 Web results
Sort by:	relevance date

[Save checked results](#)

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- [1. einstein](#)
Jul 2004
...results for 'relativity or **einstein**' Format: Long Short...CONDENSATE (BEC) A BOSE **EINSTEIN** CONDENSATE (BEC) OF SODIUM...EARLIEST INFORMATION FROM THE **BIG BANG** THE LIMITS OF SUPERLUMINAL...LIMIT ON PHOTON MASS, **GAMMA RAY** BURSTS MAY BE EXHIBITING...
[more hits from](#) [<http://newton.ex.ac.uk/aip/catagories/einstein.html>]
[similar results](#)
- [2. Beyond Einstein: From the Big Bang to Black Holes](#)
Dec 2002
...powered the **Big Bang**? · What...The Beyond **Einstein** program aims...Constellation-X: Uses X-ray-emitting...6240. The X-ray image reveals...The Beyond **Einstein** LISA mission...From the **Big Bang** to Black...Chandra X-ray Observatory...during the **Big Bang** are imprinted...impossible. Beyond **Einstein** missions...
[more hits from](#) [<http://seus.gsfc.nasa.gov/be/roadmap/Beyond-Einstein.p...>]
[similar results](#)
- [3. Imagine the Universe! Dictionary](#)
Oct 2004
...BATSE BATSE (**Burst** and Transient...Compton **Gamma Ray** Observatory...about BBXRT. **Big Bang** A theory...to as the "**Big Bang**"). binary...mass. An X-ray binary is...sources of **gamma-ray** emission...released by the **Big Bang** itself.

Your query was rewritten to:
(einstein AND "big bang")
AND ("gamma ray burst")
We did this by adding quotes to common phrases, and by removing non-essential words.
- [Repeat without rewrite](#)

Refine your search using these keywords found in the results:

[binary star](#)
[chandra x ray](#)
[cosmic background](#)
[cosmology](#)
[dark energy](#)
[hubble constant](#)
[hubble space telescope](#)
[milky way](#)
[neutrino](#)
[neutrinos](#)

” diving equipment for one legged woman ”

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Nett [Bilder](#) [Grupper](#) [Nyheter](#)^{Ny!}

diving equipment for one legged woman

Søk

[Avansert søk](#)
[Innstillinger](#)

Søk: nettet dokumenter på norsk sider fra Norge

Nett

Resultater 1 - 10 av ca. 1 010 000 for diving equipment for one legged woman. (0,14 sekunder)

[DivingObsession.com - Scuba Diving Gear](#)

To top it off, most of the time you will be doing more than **one dive** in a day; ... the energy of your **leg** movements into pushing the water back instead. ...

www.divingobsession.com/info/gear.tdf - 37k - | [hurtigbuffer](#) - [Lignende sider](#)

[New Jersey Scuba Diver - Dive Gear & Training - DIR - Doing It Right ?](#)

At right: the **one** and only proper DIR **diving** setup. ... It's a well-known fact that **women** look 25% - 30% better in a nightclub and if you get all narced up ...

www.njscuba.net/gear/trng_08_dir.html - 20k - | [hurtigbuffer](#) - [Lignende sider](#)

[Scuba Diving Equipment 101](#)

Dive Equipment 101. What you need to know. ... because of the booties and the fin will respond better to the movements of your **leg** during fin kick cycles. ...

www.genesisdiving.com/equipment.shtml - 39k - | [hurtigbuffer](#) - [Lignende sider](#)

[One-legged divers? - Scuba Diving Board](#)

I helped train a **woman** that had **one leg** amputated above the knee. ... **Equipment-wise**, I use a pro force fin and custom sewn lycra suit and wetsuit. ...

www.scubaboard.com/archive/index.php/t-46182.html - 33k - | [hurtigbuffer](#) - [Lignende sider](#)

[Scuba Diving Shop - Scuba diving equipment - Zlio](#)

Fullsuit **Women's** Akona 3mm Super Stretch Wetsuit (C: Black/Silver Stich ... Product Description - Aeris' innovative Power Enhancing vents reduce **leg** ...

scuba-diving.zlio.com/ - 57k - | [hurtigbuffer](#) - [Lignende sider](#)

[Diver Emporium-Scuba Equipment diving gear spear guns & scuba ...](#)

Our **dive** gear, and scuba **equipment** selections are growing every day. ... insertion of the knife and includes quick-release straps for attachment to the **leg**. ...

www.diveremporium.com/diveknives.html - 37k - | [hurtigbuffer](#) - [Lignende sider](#)

Sponsede lenker

[Kjøp ditt dykkerutstyr](#)

Kikk inn i Nettbutikken vår nå. Få lavere priser og hurtig levering.

www.scubastore.com

Contextual Insight – ‘The new Search’

The Boston Globe | Monday, February 11, 2008

Home News **AE** Business Sports Travel Your Life Cars Jobs Personals Real Estate

Today's Globe Politics Opinion Magazine Education Science NEON Special reports Obituaries Traffic Weather

It's back to the Super Bowl
 (By Dan Shaughnessy, Globe Staff)
 Three Patriot playoff wins are like Ray Charles songs, Nantucket oysters, and hot fudge sundae. Each one is better than the last. Last night, the Patriots earned their third trip to the Super Bowl in four years with a 41-27 win over the 16-1 Pittsburgh Steelers in the AFC Championship game.

Winter whopper buries region
 (By Donovan Mack, Globe Staff)
 The Blizzard of 2005 delivered a staggering blow to much of Eastern Massachusetts yesterday, dropping more than 3 feet of snow in some places and whipping it into towering drifts with howling gusts that topped 60 miles per hour along the coast.

Forecasting, timing cut storm's punch
 (By Maria Sacchetti, Globe Staff)
 Unlike some past major snowstorms, the Blizzard of 2005 didn't cripple wide swaths of the state, thanks in part to better forecasting and good timing.

Guantanamo tip tied to arrests of 22 in Germany
 (By Chad Sorensen, Globe Staff)
 Information obtained through the interrogation of a Guantanamo Bay detainee led to a spectacular series of counterterrorism raids in Germany this month, in which more than 700 police swept through mosques, houses, and businesses in six cities and arrested 22 suspected militant extremists, according to a senior Defense Department official.

Late night's Carson dead at 79
 (By Mark Humpal, Globe Staff)
 Johnny Carson, whose three decades as host of "The Tonight Show" made him America's most-watched comedian and favorite excuse for staying up past his bedtime, died yesterday at his Malibu home. He was 79. The cause of death was unspecified.

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2004 Year in Review
 Photos of the

LOCATION NAVIGATORS PRODUCED FROM FULL DOCUMENT

Search for COUNTERTERRORISM
 Navigate on locations

- Canada **IRRELEVANT**
- Western Europe **IRRELEVANT**
- Massachusetts **IRRELEVANT**
- Pittsburgh **IRRELEVANT**
- Germany **RELEVANT**
- Guantanamo Bay **RELEVANT**
- Malibu **IRRELEVANT**

LOCATION NAVIGATORS PRODUCED FROM LOCAL CONTEXT

Search for COUNTERTERRORISM
 Navigate on locations

- Guantanamo Bay **RELEVANT**
- Germany **RELEVANT**



Search 2.0 - Precision



Contextual Insight comparison:

Search a word to compare the quality of person names found using **Contextual Insight's sentence-level relevance**, vs. traditional document-level relevance.

Traditional search results (document-level relevance)

- Bill Clinton
- George W. Bush
- Elvis Presley
- Adolf Hitler
- George H. W. Bush
- Michael Jackson
- Frank Sinatra
- Ronald Reagan
- Richard Nixon
- Elton John

Contextual Insight results (sentence-level relevance)

- Marilyn Monroe
- Rudolph Valentino
- Rodolfo Alfonso Raffaello Piero
- Filiberto Gugliemi Di Valentina
- Jean Harlow
- Raquel Welch
- Diana Dors
- Jayne Mansfield
- Theda Bara
- Bev Houghton

Sentences with "sex symbol" and person:"Marilyn Monroe"

Marilyn Monroe (June 1, 1926 - August 5, 1962) was a twentieth-century movie star, sex symbol and pop icon.

Jean Harlow (March 3, 1911 - June 7, 1937), was an US film actress who became known as the "original blonde bombshell", predating Marilyn Monroe as a blonde sex symbol.

Still, she was widely considered Marilyn Monroe 's number one rival as Hollywood 's top blonde sex symbol in a crowded field of contenders that also included Mamie Van Doren , Cleo Moore , Diana Dors , and Sheree North.

Taking it further

fast Answers



Sentences with "terrorism" and date:"2001-09-11"

The deadliest events described as terrorism and not known to have been sponsored by a state were the **September 11, 2001** attacks on the World Trade Center in **New York**, the Pentagon in **Arlington** County, **Virginia**, and **Somerset** County, **Pennsylvania** with a death toll of around 3000.

[View this document](#)

In any estimate, non-Coalition civilian deaths exceed those of the **United States** in the attacks of **11 September 2001** from which the "war on terrorism" began.

[View this document](#)

The term's usage (and controversy) appears to have increased in parallel with media coverage of terrorism since the **September 11, 2001** attacks and the **Bush** administration's proclamation of a War on Terrorism.

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The term's usage (and controversy) appears to have increased in parallel with media coverage of terrorism since the **September 11, 2001** attacks and the **Bush** administration's proclamation of a War on Terrorism, but its usage to refer to lynching dates back to at least 1996.

[View this document](#)

It presents a selection of contrasting viewpoints on four central questions about the War on Terrorism: what led up to the **September 11** attacks; what is the war's nature and justification; what concerns do domestic antiterrorism efforts raise; and how should the war proceed?

Highlight key:

- Person
- Organization
- Date
- Location
- Job Title
- Price
- University
- Newspaper

fast

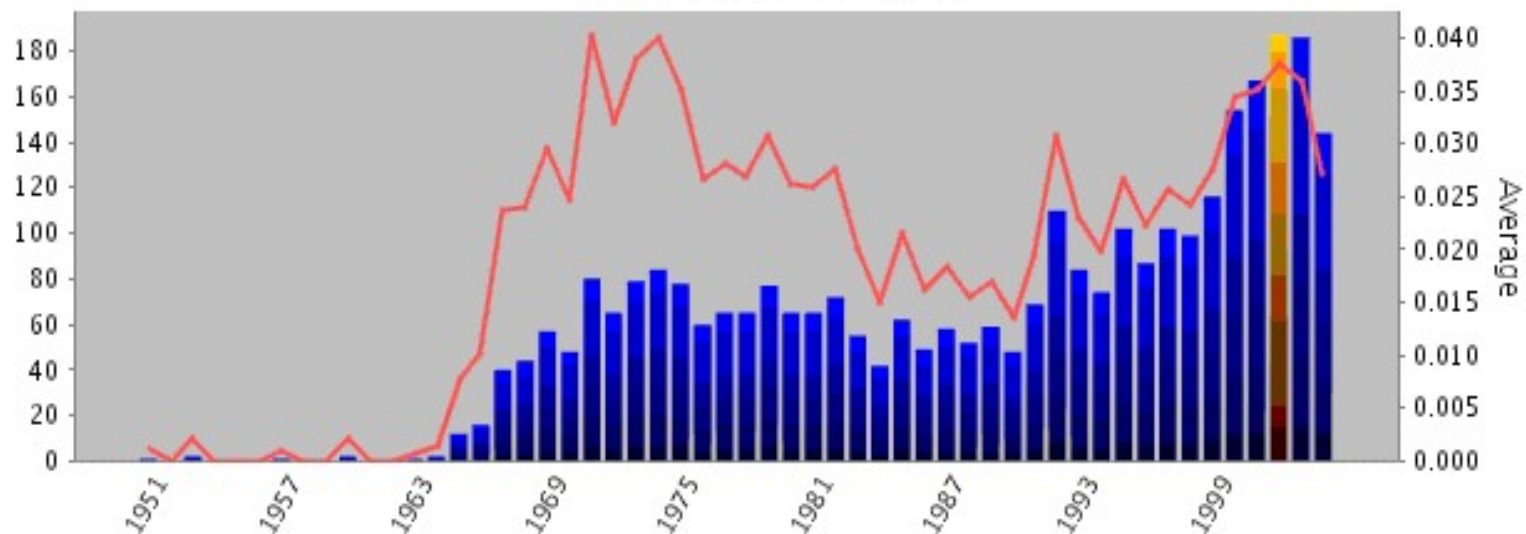
Leverage Content: Contextual Search



Enter a keyword:

To see the **Disease, Symptom, Chemical & Publication Year** related to it. Click on the links below to learn more.

Publication Year



DISEASE: [obesity](#); [hypertension](#); [ischemic heart disease](#); [insulin resistance](#); [myocardial ischemia](#);

SYMPTOM: [obesity](#) ; [pressure](#) ; [weight loss](#) ; [weight gain](#) ; [hypercholesterolemia](#) ;

CHEMICAL: [lipoprotein cholesterol](#) ; [cholest-4-en-3-one](#) ;



FAST ESP

Used for Data Quality improvement



'Search' is mastering the challenge of relaxed matching

488941 britney spears	121 bridney spears	44 britney spears	21 briany spears	12 briney spears	8 britanys spears	6 brtanny spears	4 bnritney spears
40134 brittany spears	121 britainy spears	39 brienty spears	19 birney spears	12 britney spears	8 britley spears	6 brittany spears	4 brandy spears
36315 brittney spears	121 britmey spears	39 brritney spears	19 brirney spears	12 rittany spears	8 britneyb spears	6 bruttany spears	4 brbritney spears
24342 britany spears	109 brietney spears	36 bbritney spears	19 britnaey spears	11 braitney spears	8 britnrey spears	6 brytany spears	4 breatiny spears
7331 britny spears	109 briithy spears	36 briitany spears	19 britnee spears	11 brettney spears	8 britnty spears	6 biitny spears	4 breetney spears
6633 briteny spears	109 britni spears	36 britanney spears	19 britony spears	11 britamy spears	8 brittner spears	6 pretny spears	4 bretiney spears
2696 britteny spears	109 brittant spears	36 briterny spears	19 brittany spears	11 britery spears	8 brottany spears	6 ritany spears	4 brfitney spears
1807 briney spears	98 bittney spears	36 britneey spears	19 britttney spears	11 britnary spears	7 baritney spears	5 bbritany spears	4 briattany spears
1635 brittny spears	98 brithey spears	36 britnei spears	17 birtny spears	11 brittent spears	7 birtney spears	5 bbrittney spears	4 brieteny spears
1479 brintey spears	98 brittiany spears	36 britniy spears	17 brieny spears	11 bruttany spears	7 biteney spears	5 biitney spears	4 briety spears
1479 britanny spears	98 btiitney spears	32 britbey spears	17 brintty spears	11 pritny spears	7 bitiny spears	5 bitny spears	4 briitny spears
1338 britiny spears	89 brietny spears	32 britneu spears	17 brithy spears	10 bitaney spears	7 breateny spears	5 breathny spears	4 briittany spears
1211 britnet spears	89 brinety spears	29 britent spears	17 brittanie spears	10 brenty spears	7 brianty spears	5 breney spears	4 brinie spears
1096 britiney spears	89 brintny spears	29 brittnany spears	15 brinney spears	10 bristney spears	7 brintye spears	5 brethney spears	4 brinteny spears
991 britaney spears	89 britnie spears	29 britttany spears	15 briten spears	10 britay spears	7 britianny spears	5 brettny spears	4 brintne spears
991 britnay spears	89 brittney spears	29 btiney spears	15 briterney spears	10 britinny spears	7 britly spears	5 bridny spears	4 britaby spears
811 briithney spears	89 brittnet spears	26 birttney spears	15 briitheny spears	10 brittaany spears	7 britnej spears	5 brigney spears	4 britaey spears
811 brtiney spears	89 brity spears	26 breitney spears	15 britneny spears	10 brittanys spears	7 britneyu spears	5 britttney spears	4 britainey spears
664 birtney spears	89 ritney spears	26 brinity spears	15 brittamy spears	10 brittini spears	7 britniey spears	5 brinaty spears	4 britinie spears
664 brintey spears	80 bretny spears	26 britenay spears	15 brittmy spears	10 brittyny spears	7 britnnay spears	5 brinay spears	4 britinney spears
664 briteney spears	80 britnany spears	26 britneyt spears	15 brytnei spears	10 britteny spears	7 brittian spears	5 brinetty spears	4 britmney spears
601 bitney spears	73 brinteny spears	26 brittan spears	15 btirney spears	10 brutany spears	7 briyny spears	5 brinitty spears	4 britnear spears
601 brinty spears	73 brittainy spears	26 brittne spears	15 rittney spears	9 bitteny spears	7 britttany spears	5 brinny spears	4 britnel spears
544 brittaney spears	73 pritney spears	26 btiitny spears	14 brinet spears	9 brinntany spears	7 brttiney spears	5 brintery spears	4 britneuy spears
544 brittnay spears	66 brintany spears	24 bteitny spears	14 britneyy spears	9 britanay spears	7 brittany spears	5 britary spears	4 britnewy spears
364 britey spears	66 britnrey spears	24 birteny spears	14 britten spears	9 britinany spears	7 britttany spears	5 britbney spears	4 britnmeys spears
364 brittyny spears	59 briitney spears	24 brightney spears	12 beritney spears	9 britn spears	6 beritny spears	5 brithany spears	4 brittaby spears
329 brtney spears	59 britinay spears	24 brintiny spears	12 bretiny spears	9 britnew spears	6 bhritney spears	5 britieny spears	4 brittery spears
269 bretney spears	54 britneay spears	24 britanty spears	12 briatny spears	9 britneyn spears	6 birthney spears	5 britiey spears	4 britthey spears
269 britneys spears	54 britner spears	24 britteny spears	12 brieny spears	9 britrney spears	6 breathney spears	5 britnt spears	4 brittinaey spears
244 britne spears	54 britney's spears	24 brittini spears	12 brinany spears	9 brtiny spears	6 breaty spears	5 britnys spears	4 brittnat spears
244 brytney spears	54 britnye spears	24 britnwy spears	12 britaany spears	9 britttney spears	6 bretany spears	5 britrny spears	4 brittteny spears
220 breatney spears	54 britt spears	24 brittini spears	12 britan spears	9 brtny spears	6 briatany spears	5 brittenny spears	4 brittnye spears
220 brittiany spears	54 brttany spears	24 brittnie spears	12 britine spears	9 brytny spears	6 brint spears	5 brittnee spears	4 britttney spears
199 brittney spears	48 bitany spears	21 biritney spears	12 britnea spears	9 rbitney spears	6 britteney spears	5 brittnt spears	4 briutney spears
163 britny spears	48 briny spears	21 birtiny spears	12 britnes spears	8 britny spears	6 britian spears	5 brney spears	4 briyeny spears
147 breatny spears	48 brirney spears	21 biteny spears	12 britnez spears	8 bithney spears	6 britinty spears	5 broitney spears	4 brnity spears
147 brittiney spears	48 britant spears	21 bratney spears	12 britnny spears	8 brattany spears	6 britttney spears	5 brotny spears	4 brtteny spears
147 britty spears	48 britnety spears	21 britani spears	12 brittenay spears	8 breitny spears	6 britnsy spears	5 bruteny spears	4 brttiany spears
147 brotney spears	48 brittanny spears	21 britanie spears	12 brittneys spears	8 breteny spears	6 britrey spears	5 btiyney spears	4 bryney spears
147 brutney spears	48 brttney spears	21 briteany spears	12 brittony spears	8 brightny spears	6 britsy spears	5 btrittney spears	4 brythney spears
133 brittteny spears	44 birttany spears	21 brittay spears	12 brteny spears	8 brintay spears	6 brittine spears	5 gritney spears	4 brytne spears
133 briyney spears	44 brittani spears	21 brittinay spears	12 bitany spears	8 brintey spears	6 brittrny spears	5 spritney spears	4 brytni spears
121 bittany spears	44 brityney spears	21 brtany spears	12 blittney spears	8 briotney spears	6 brittsny spears	4 bitny spears	4 brytnie spears

Simple Search Contextual Search Similarity Search **Fielded Search**

Search for: In field: Find: [Add more...](#)

 [Remove](#)

Advanced Controls

Artist	Album	Year
mozart	Von Gluck, Mozart, Van Beethoven, Von Weber, Wagner, Tchaikovsky / Les Grandes Ouvertures d'Opéras (2/2)	1995
wolfgang amadeus MOZART	Wolfgang Amadeus Mozart / Mozart Naturally	
wolfgang amadeus MOZART	Wolfgang Amadeus Mozart / Die Hochzeit des Figaro(Nicht Aufnahme)	
mozart	Mozart / The Man & His Music	1995
mozart	Mozart / モーツァルト名曲集	
mozart	Mozart / For Relaxation	
wolfgang amadeus MOZART	Wolfgang Amadeus Mozart / MISSA in C K.317 "CORONATION"	
mozart	Mozart / Famous classical works	
mozart	Mozart / Mozart Naturally	1994
wolfgang amadeus MOZART	Wolfgang Amadeus Mozart / Mozart: The Piano Concertos 7 - Bilson	1988
mozart	MOZART / MOZART	2006
wolfgang amadeus MOZART	Wolfgang Amadeus Mozart / Intégrale De L'oeuvre Pour Piano À Quatre Mains (CD1)	1990
mozart	Mozart / Violin Concerto No.4 in D major, K.219; Violin Concerto No.5 in A major, K.219	
w.a. mozart	W.A. Mozart / Salzburger Saitenklang	
w.a. mozart	W.A. Mozart / Das klinget so herrlich - Mozart und die Salzburger Volksmusik	

Artist (100)

- mozart (2810)
- wolfgang amadeus MOZART (1980)
- Mozart, Wolfgang amadeus (370)
- W. A. MOZART (175)
- Mozart (Complete Works) (152)
- w.a. mozart (139)
- w.a.mozart (47)
- WOLFGANG AMADEUS MOZART (1756-1791) (39)
- MOZART WOLFGANG AMADEUS (37)
- Mozart, Wolfgang Amadeus (1756-1791) (34)
- Mozart, W.A. (28)
- Mozart, W. A. (27)
- London Mozart Players (17)
- wolfgang amadeus mozart (17)
- WA Mozart (16)
- Wolfgang A. Mozart (16)
- Wolfgang Amadeus Mozart (12)
- MOZART FESTIVAL ORCHESTRA (12)
- Wolfgang Mozart (11)
- W A Mozart (10)

80 more...

Genre (100)

Year (94)

Simple Search Contextual Search Similarity Search **Fielded Search**

Search for: In field: Find: [Add more...](#)

 [Remove](#)

Advanced Controls

Artist	Album	Year
Wolfgang Amadeus Mozart	Wolfgang Amadeus Mozart / Mozart valogatas cd2	1990
Wolfgang Amadeus Mozart	Wolfgang Amadeus Mozart / Divertimenti KV 247, 251, 287, 334 (Disc 1)	1995
Wolfgang Amadeus Mozart	Wolfgang Amadeus Mozart / Requiem, KV 626	1966
Wolfgang Amadeus Mozart	Wolfgang Amadeus Mozart / Divertimenti KV 247, 251, 287, 334 (Disc 2)	1995
Wolfgang Amadeus Mozart	Wolfgang Amadeus Mozart / Folge 1 (CD 2) - Die Grössten Klavierkonzerte	
Wolfgang Amadeus Mozart	Wolfgang Amadeus Mozart / Integrale delle sonate per pianoforte [2/4]	
Wolfgang Amadeus Mozart	Wolfgang Amadeus Mozart / Violin Concertos Nos. 4-5	1989
Wolfgang Amadeus Mozart	Wolfgang Amadeus Mozart / Klavierkonzert No. 16 & 19 Christian Zacharias - RSO Stuttgart	
Wolfgang Amadeus Mozart	Wolfgang Amadeus Mozart / 4 Hornkonzerte Fagottkonzert	
Wolfgang Amadeus Mozart	Wolfgang Amadeus Mozart / Piano Concerti - Nos. 20 & 27	1975
Wolfgang Amadeus Mozart	Wolfgang Amadeus Mozart / ヴァイオリン協奏曲《トルコ風》	
Wolfgang Amadeus Mozart	Wolfgang Amadeus Mozart / The Mozart Experience 2 - Symphonies Nos. 31, 35 and 36 [disque 1/5]	
Wolfgang Amadeus Mozart	Wolfgang Amadeus Mozart / Diet	
Wolfgang Amadeus Mozart	Wolfgang Amadeus Mozart / MOZART REQUIEM - Harnoncourt	2003
Wolfgang Amadeus Mozart	Wolfgang Amadeus Mozart / Best Of The Classics: Amadeus Mozart	1998

Artist (6)

- Wolfgang Amadeus Mozart (1998)
- Mozart Festival Orchestra (10)
- Leopold Mozart (7)
- Mozart & Haydn (4)
- Mozart - Beethoven (4)
- Beethoven Mozart (3)

Genre (40)

Year (73)

Simple Search

Contextual Search

Similarity Search

Fielded Search

Search for: elvis presley
 In field: artist1
 Find: All Words
 DISC
 category
 Exact Phrase
 rock
 genre
 All Words
 Add more...
 Search
 ?
 Remove
 Remove

Advanced Controls

Artist	Album	Year
ELvis Presley	Elvis Presley / Elvis Presley 2	
ELvis Presley	Elvis Presley / Elvis Presley II	2003
ELvis Presley	Elvis Presley / The Essential Collection	1994
ELvis Presley	Elvis Presley / Elvis insn't dead	
ELvis Presley	Elvis Presley / Love Me Tender	
ELvis Presley	Elvis Presley / the first hits	2005
ELvis Presley	Elvis Presley - 20th Aniversary - Disk 2 / Elvis 20Th Aniversary. His Greatest Love Songs Cd 2	1998
ELvis Presley	Elvis Presley - 20th Aniversary - Disk 1 / Elvis 20Th Aniversary. His Greatest Love Songs Cd 1	1998
ELvis Presley	Elvis Presley / Rubberneckin (Limited Edition) (Single)	2003
ELvis Presley	Elvis Presley / 18 qreatest love songs	1992
ELvis Presley	Elvis Presley / Top Ten Hits, The (Disk 2)	
ELvis Presley	Elvis Presley / Raqs To Riches	1997
ELvis Presley	Elvis Presley / The Top Ten Hits - Disc 2	1995
ELvis Presley	Elvis Presley / All Shook Up	
PRESLEY Elvis	Presley Elvis / "Can't Help Falling In Love"	1993

Artist (11)

Genre (24)

- rock & roll (859)
- rock (623)
- classic rock (43)
- rock'n roll (9)
- rock n' roll (8)
- rock'n'roll (6)
- rock 'n' roll (6)
- rock/pop (4)
- rock / pop (3)
- folk-rock (3)
- alt. rock (3)
- rock and roll (2)
- rock & roll danc (1)
- rock & roll, rockabilly (1)
- rock 'n roll (1)
- rock & roll - elvis presley (1)
- karaoke rock (1)
- rock `n roll (1)
- hawaiian; rock (1)
- rock&roll (1)
- general rock (1)
- rock `n roll (1)
- slow rock (1)
- southern rock (1)

Top 10.

Year (54)

Simple Search Contextual Search Similarity Search **Fielded Search**

Search for: elvis presley In field: artist1 Find: All Words Add more... Search ?
 DISC category Exact Phrase Remove
 rock genre All Words Remove

Advanced Controls

Artist	Album	Year
Elvis Presley	Elvis Presley / Elvis! His Greatest Hits (CD 3)	1997
Elvis Presley	Elvis Presley / Hawaii USA	
Elvis Presley	Elvis Presley / 1954-1961	
Elvis Presley	ELVIS PRESLEY / Love Songs	1999
Elvis Presley	Elvis Presley / A Hot Winter Night In Dallas	1976
Elvis Presley	Elvis Presley / There's Always Me - Vol.2 - CD1	1998
Elvis Presley	Elvis Presley / 1970-07-16 - - MGM Studios, Stage1, Culver City, CA (Bootleg)	1970
Elvis Presley	Elvis Presley / Alvis at the sun cd1	
Elvis Presley	Elvis Presley / 50s Masters Cd1	
Elvis Presley	Elvis Presley / Brazilian 5 Vinyl LP Box Set - Disc 3 (Of 5)1989 - OS ANOS 70	1989
Elvis Presley	Elvis Presley / 30 #1 Hits	2002
Elvis Presley	Elvis Presley / Holding Back The Years	1995
Elvis Presley	Elvis Presley / The Ultimate Collection - Elvis Ballads	1999
Elvis Presley	Elvis Presley / Stand By Me Vol.2	
Elvis Presley	ELVIS PRESLEY / MEGA ELVIS	

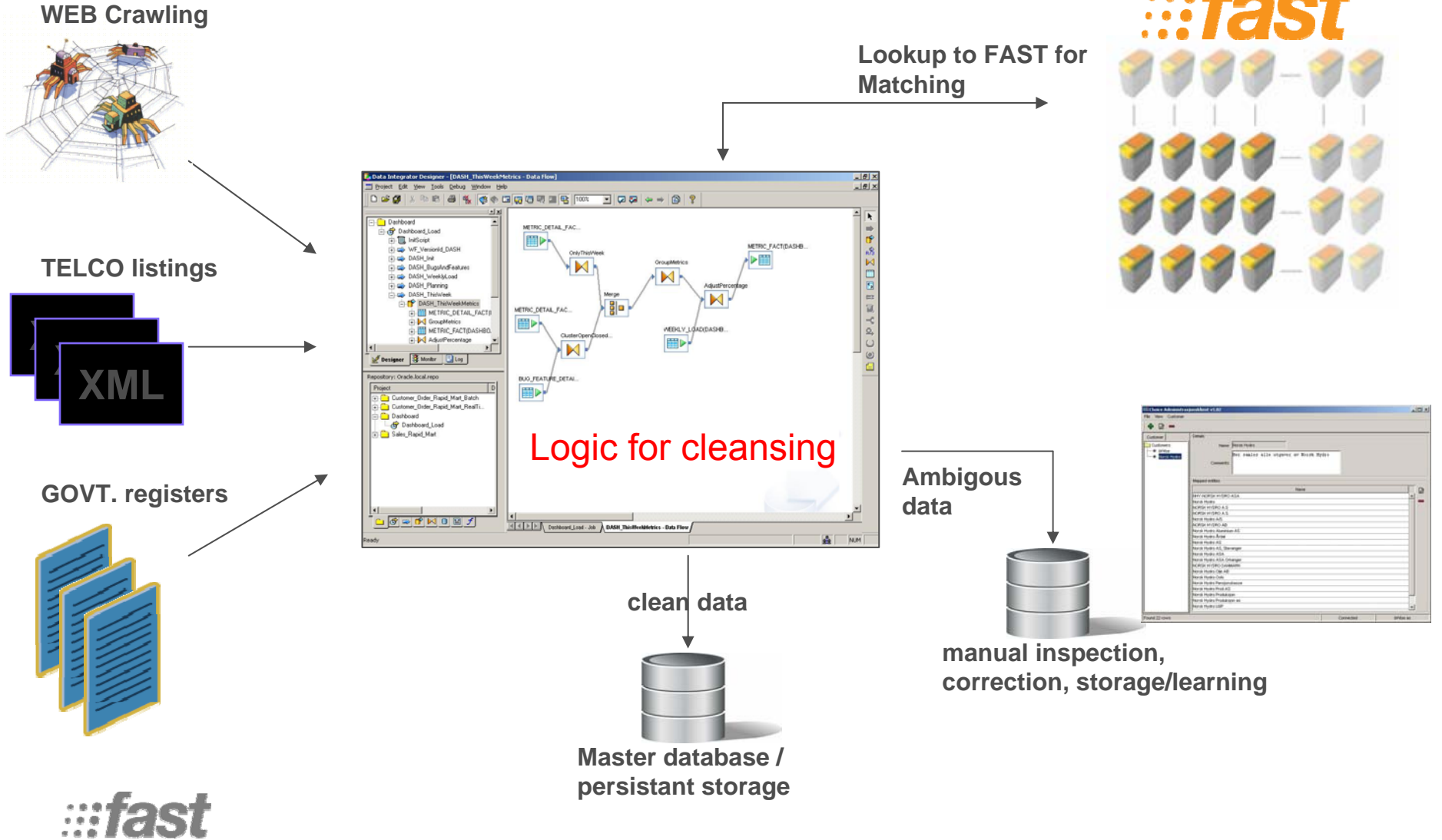
Genre (13)

- rock and roll (866)
- rock (598)
- classic rock (40)
- pop rock (6)
- alt. rock (5)
- folk-rock (3)
- general rock (1)
- hawaiian; rock (1)
- rock & roll - elvis presley (1)
- rock & roll danc (1)
- rock & roll, rockabilly (1)
- slow rock (1)
- southern rock (1)

Top 10...

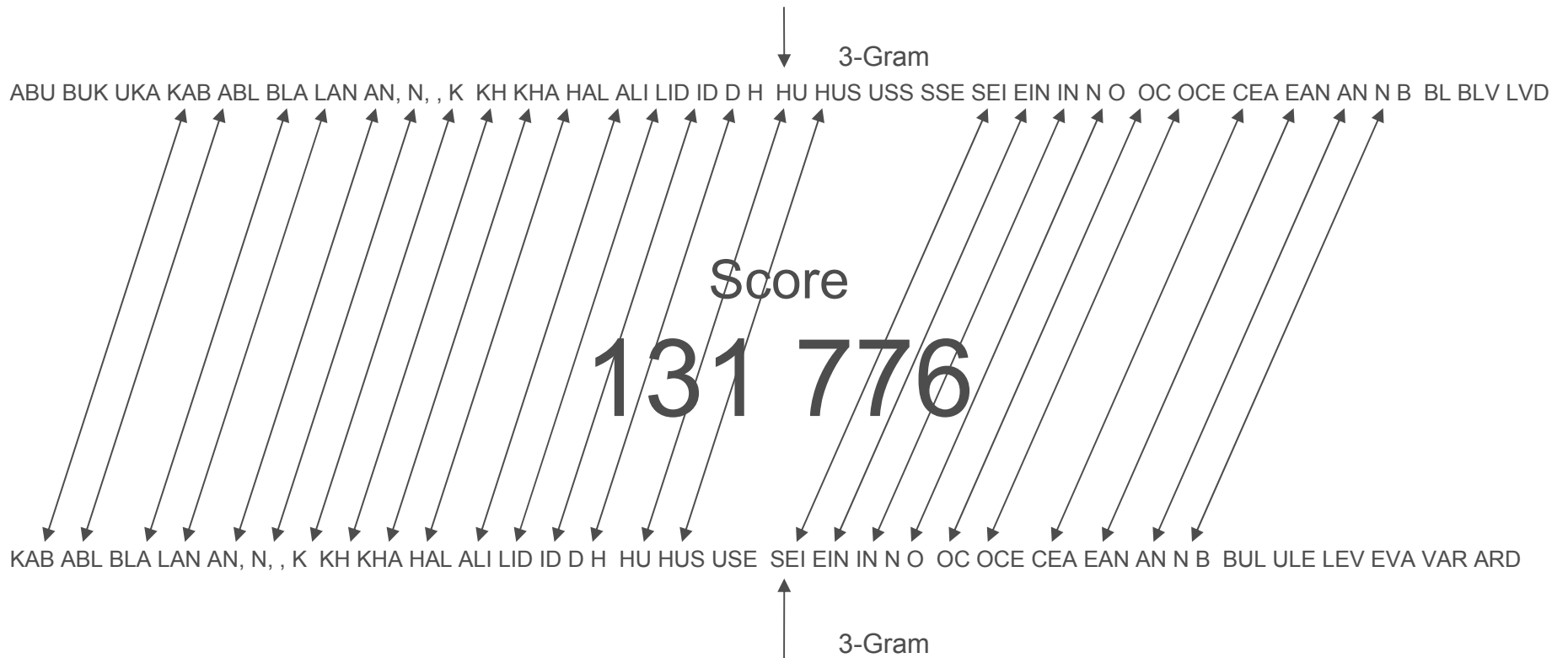
Year (55)

Cleansing Process :: Birdsvie



Sample de-duping assessment

ABUKABLAN, KHALID HUSSEIN OCEAN BLVD 33062 POMPANO BEACH



KABLAN, KHALID HUSEIN OCEAN BULEVARD POMPANO BEACH



Features in FAST Data Cleansing Accuracy Approaching 99.5%

- **N-Gram Score to compare strings on similarity**
 - Lai Nancy, 501 N. Clinton St. \approx Nancy J. Lai, 501 North Clinton
- **Levenshtein edit distance algorithms**
 - Calculates the number of edits that separates two strings
 - John Meyers \approx John P. Meiers; Britney Spears \approx Britney Spaers
- **Phonetic match using Soundex, Kölner fonetic, Chapman and Jarowinkler**
 - Calculates an integer from the strings, and matches on 'sounds like'
 - Christin \approx Kristin; Kierkegaard \approx Kierkegård
- **Weighted Multi-field Compare / Context hits**
 - Scores hits differently based on field importance
- **Dictionaries to support 'proper spelling' (names and addresses)**
- **Jaro and Jarowinkler**
 - Looks for similarity around a string position, scoring starting of strings higher
- **'Charset' normalization**
 - For multinational chars and name combinations
 - André = Andre, Jürgen = Jurgen etc.

Zero-term Search

8 of 32 FRIENDS | MESSAGES ▼

- John Sinclair
- Steggers
- Debstar
- Davies
- Mills
- Ross
- Tony
- Lewey

YOUR PARTY PLACE | 340 of 13125 songs

Davies
110 of 6995 songs

Songs I have never heard

DebStar
164 of 3663 songs

Steggars
66 of 3663 songs

5 Star Rated

Mod Rock

Hip Hop

Save Clear

FILTERS ▼

- Mod Rock
- 5 Star Rated
- 4 Star Rated
- Classics
- Love Songs
- Explicit Lyrics
- 80's
- 90's
- 00's

MY MUSIC ▼

- ▶ All
- ▶ Friday Night
- ▶ Easy Listening
- ▶ Matt's Music
- ▶ Playlist 01
- ▶ Recent Tracks
- ▶ 4 Star
- ▶ 3 Star

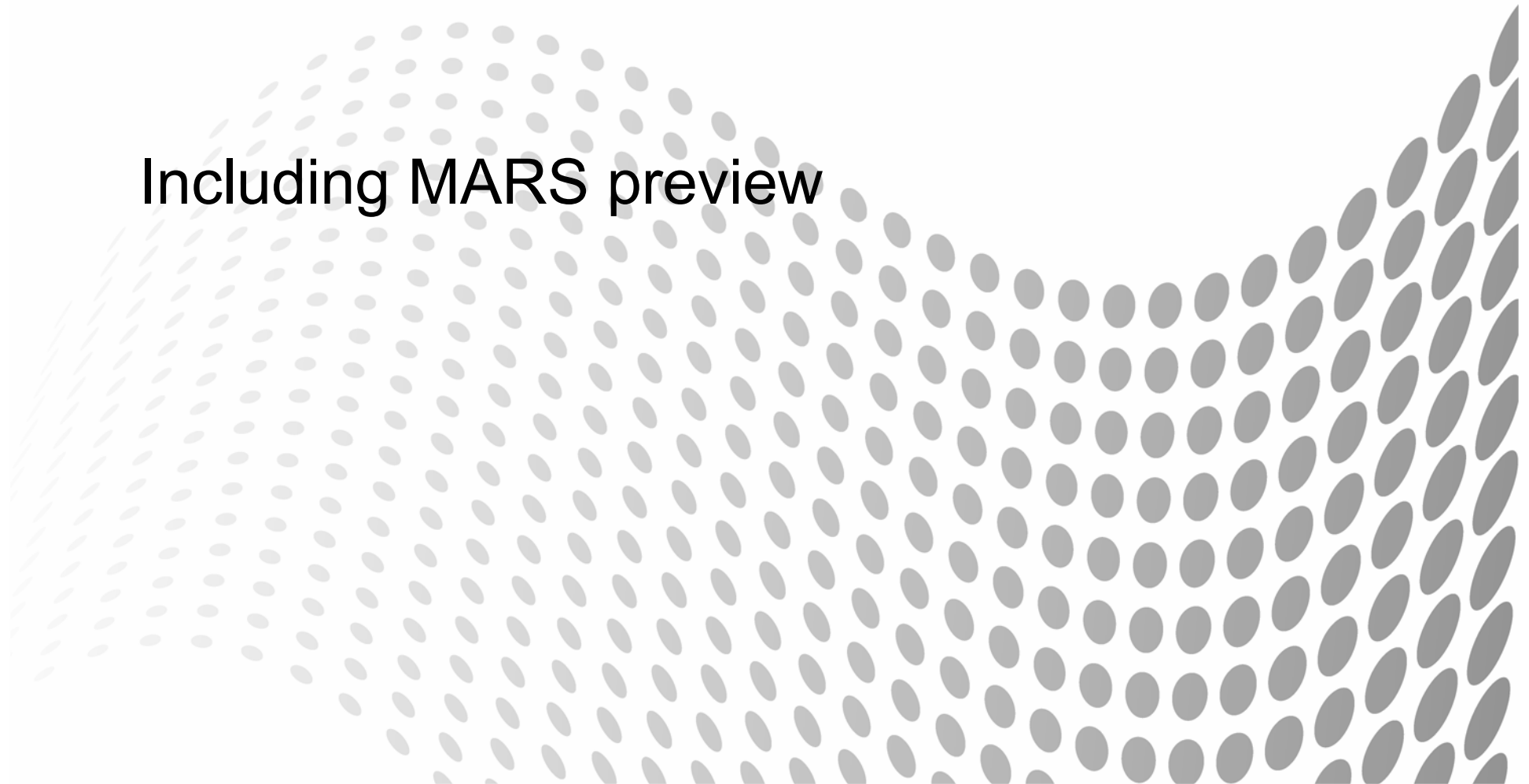
MASTER MIX POOL (click to shrink) ▼

Artist ▼	Time ▼	Song ▼
Bloc Party	15:25	Luno (Bloc Party Vs_DFA 1979)
Bloc Party	02:12	Plan (Replanned By Mogwai)
Bloc Party	05:55	Complements (Shibuyaka Remix)
Bonnie 'Prince' Billy	03:39	Whats Wrong with a zoo
Bonnie 'Prince' Billy	02:34	I Send My Love to You
Bonnie 'Prince' Billy	02:30	Stablemate
The Cinematic Orchestra	15:25	Channel 1 suite



Content Capture & Refinement

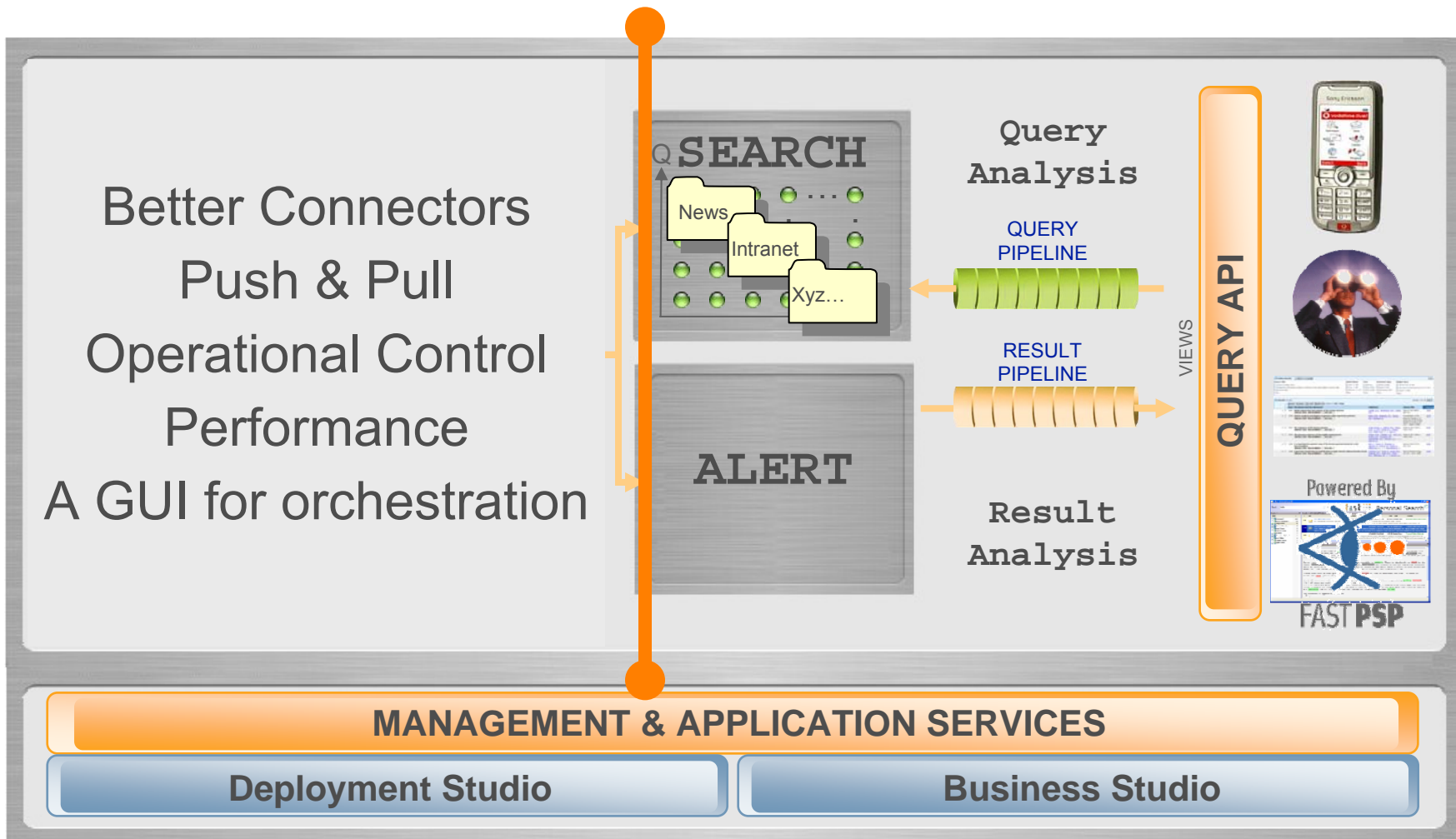
Including MARS preview



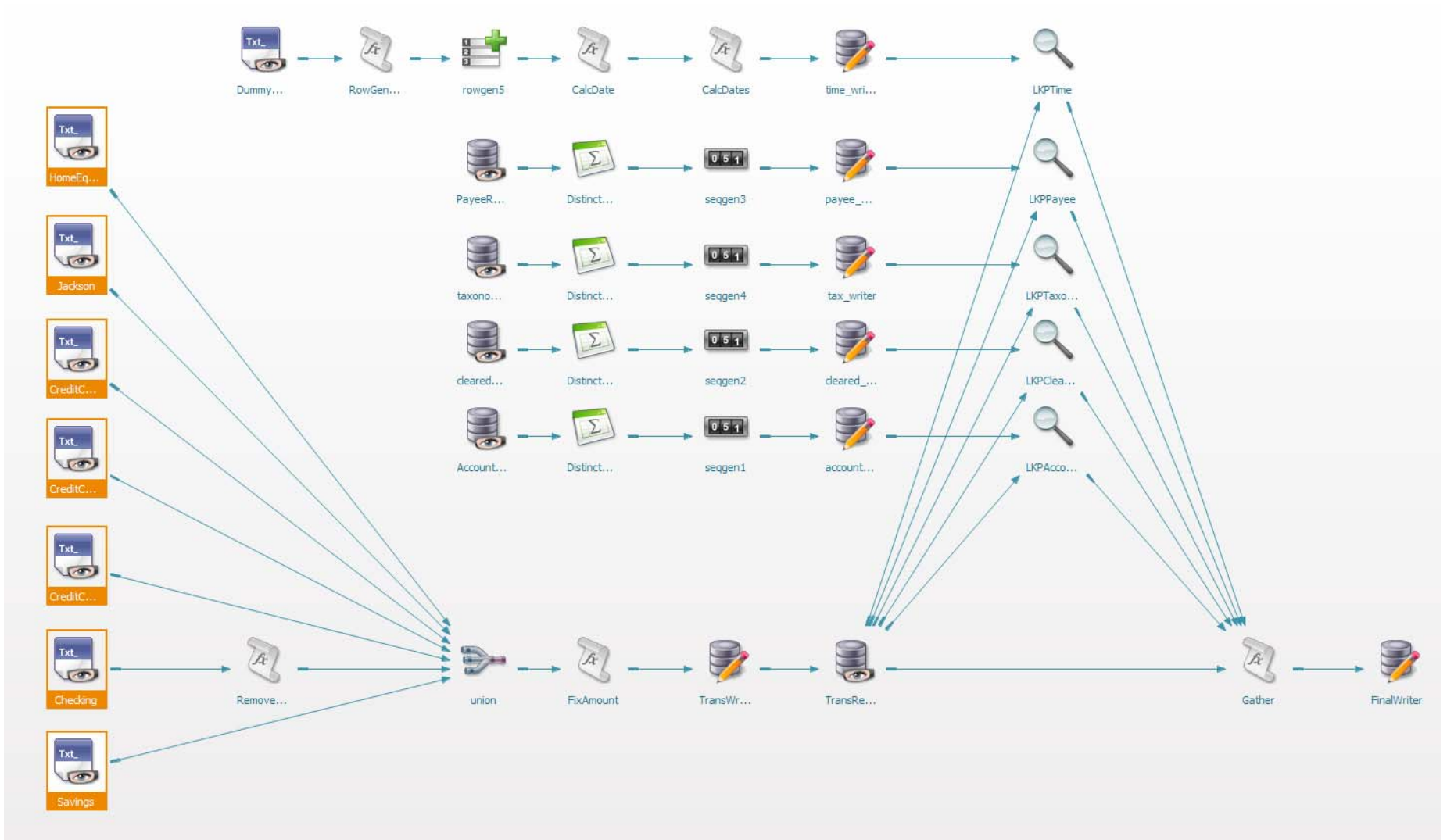
Current FAST Architecture

CCR

MARS



A more Complex CCR Graph



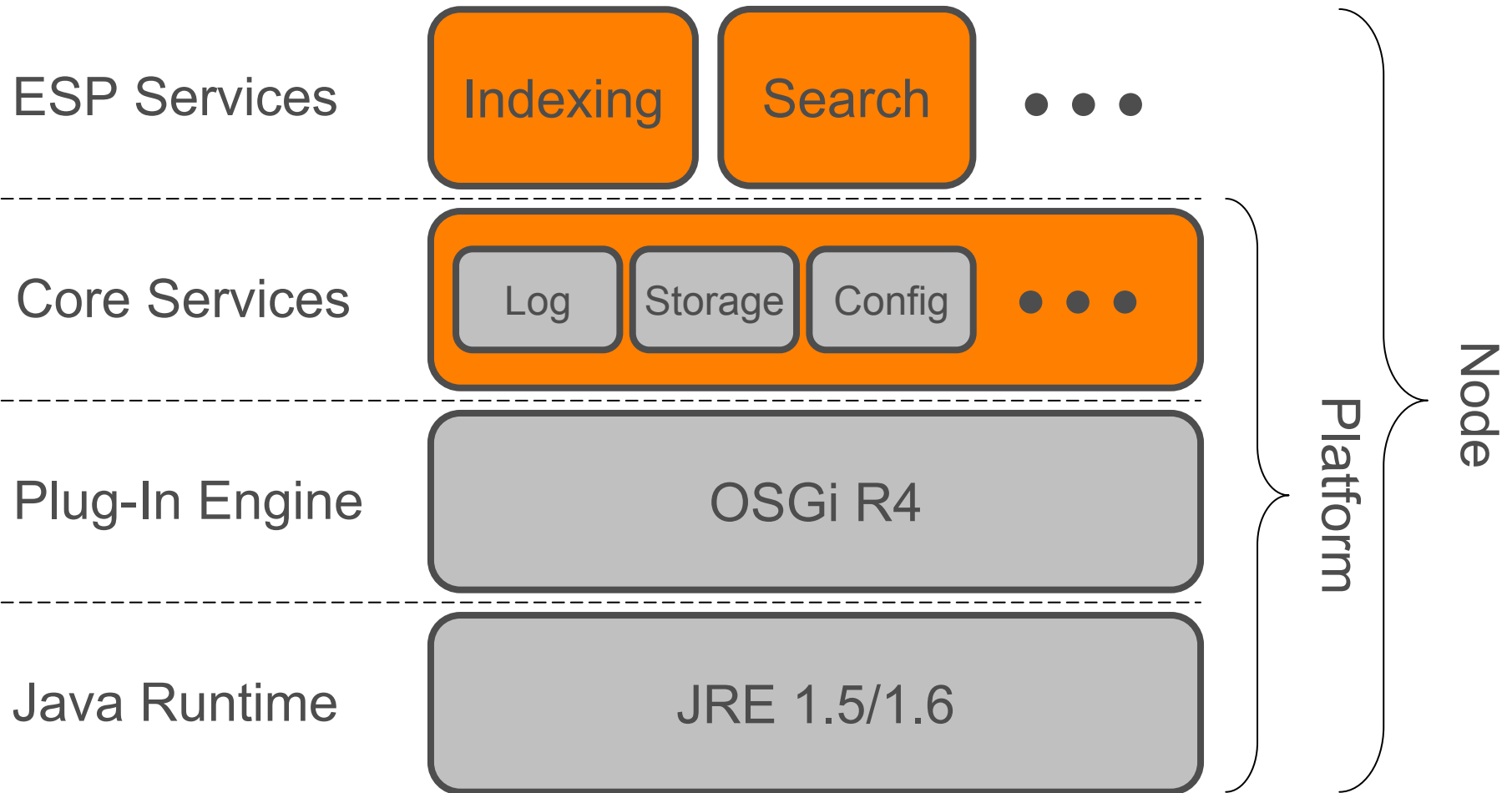
MARS: Vision and objectives

«*Project Mars designs the **next generation search core** that will strengthen FAST's position as the most compelling vendor of advanced, mission critical search solutions for the next 10 years.*»

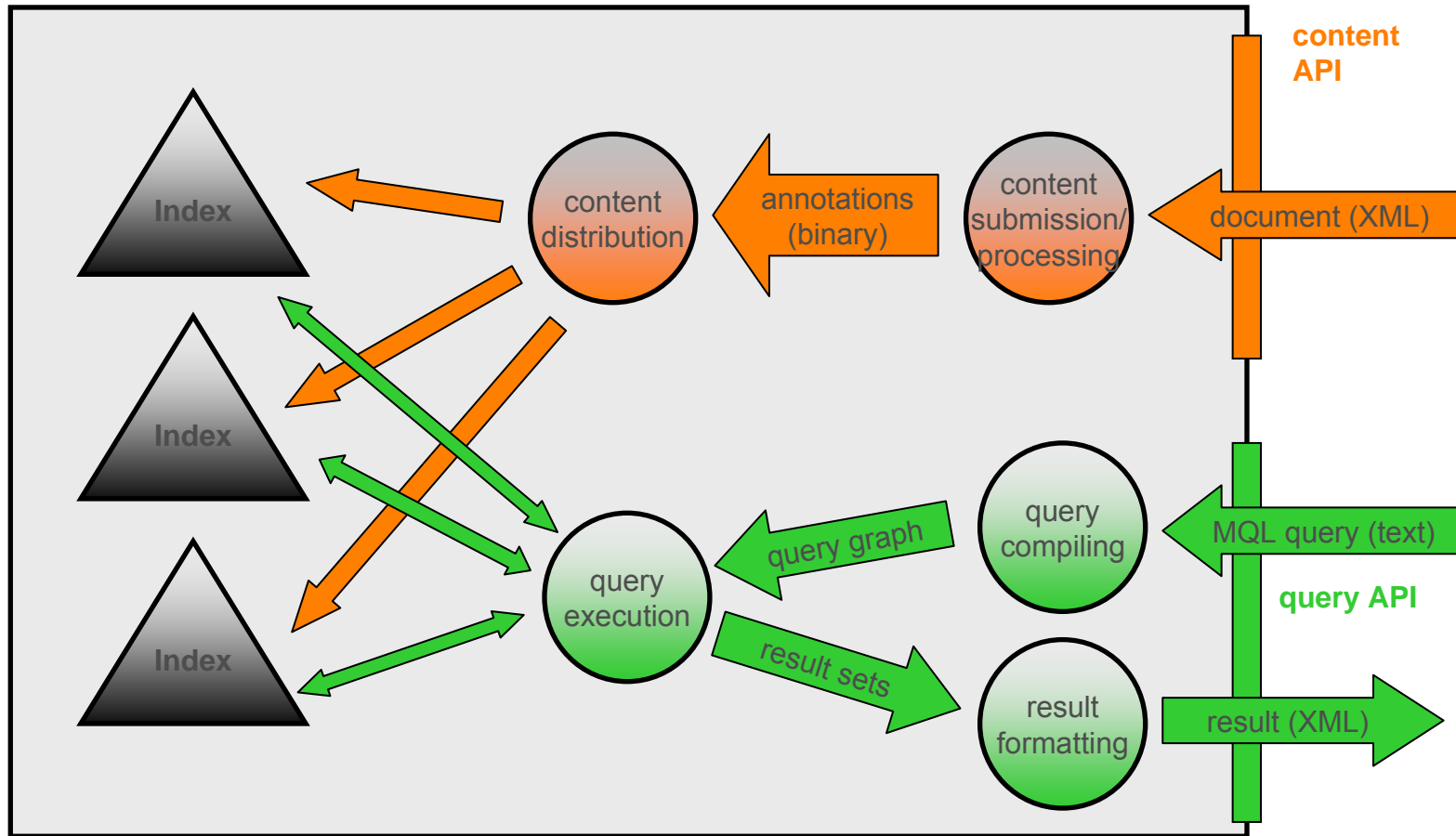
Key Design Objectives:

- Schema flexibility; no a priori schema definitions
- Contextual search driving extreme precision and analytics
- Advanced query operators including join, groupby, etc.
- End-to-end XML support including XPath and XQuery
- Improved performance, availability, and security
- Flexibility in development and deployment
- Complete disk – cache – pure memory flexibility
- Support new HW and technology developments (multi-core, 64-bit, SAN/NAS)

Mars Node Module Decomposition



Content Processing and Querying

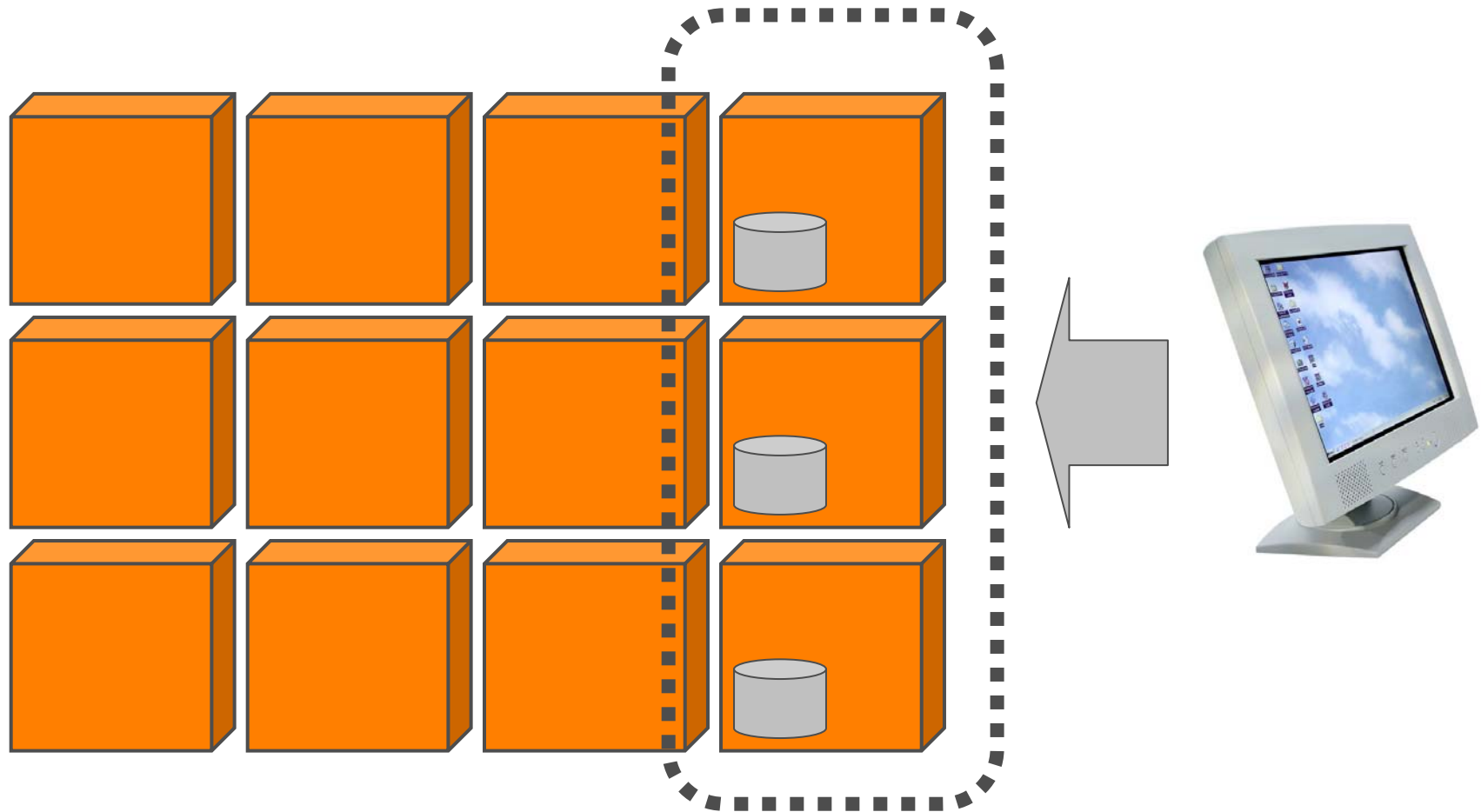


Architecture Views
System Manager

System nodes

Management nodes

Management console

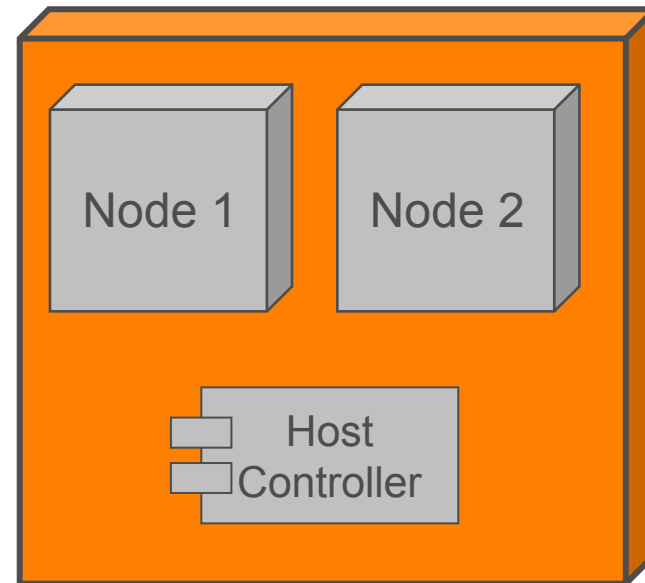


Deployment View: Hosts and Nodes

System deployed across several Hosts



A host may contain several Nodes



FAST ESP 5.0 indexing performance

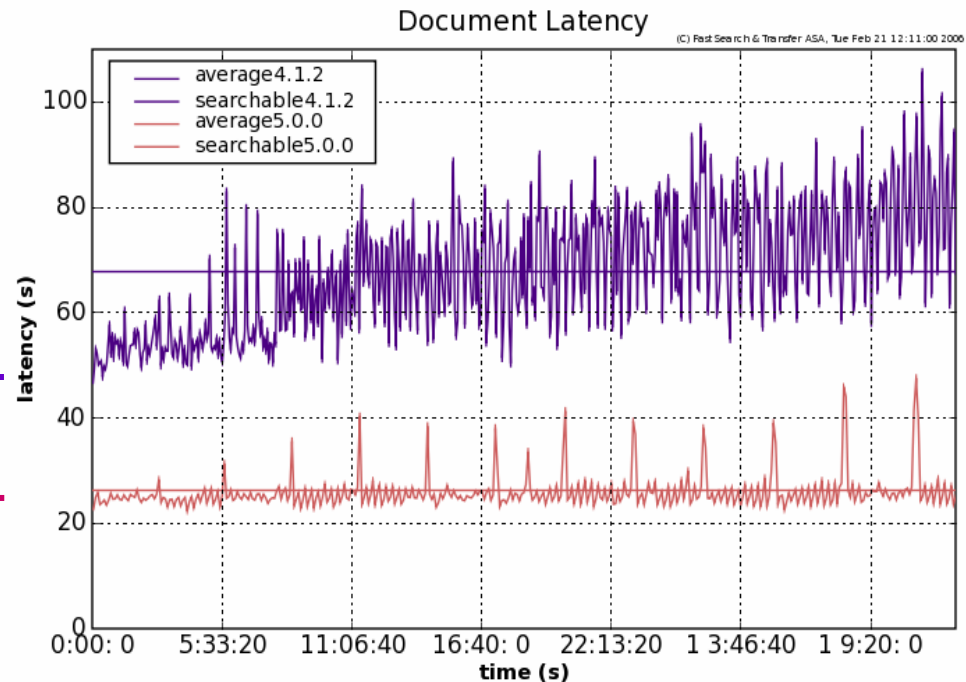
INDEXING
LATENCY
REDUCED BY

70-90%

LATENCY IS NOW FLAT

4.1.2 Previous Maintream release

5.0 Current Maintream release



INDEXING
THROUGHPUT
GAIN

40%

DISK
FOOTPRINT
REDUCTION

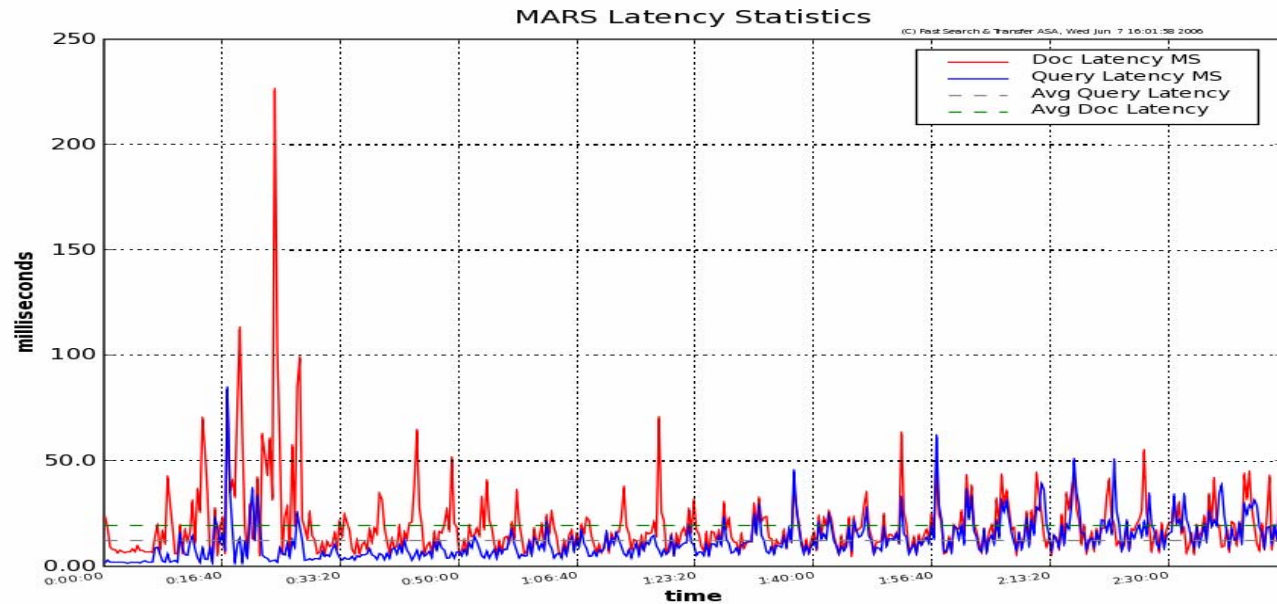
50%




Next generation FAST ESP Search core: MARS

- Average indexing latency: **20 ms**
- Average query latency while sustaining >100 QPS (scoped 2-200 term queries): **12 ms**
- Disk footprint vs. ESP: **-70%**
- Disk – Memory configuration flexibility
- In-place Updatable index
- >80MB/s continuous index → disk

- **Beta deployments in Q3 '06**
- **Supported by \$70M research grants**
- **200 FAST developers**
- **Extensive academic network**





“The scientific theory I like best is
that the *rings of Saturn* are composed
entirely of lost airline luggage.”
- Mark Russell.