TC2400 - Search Workshop 2.0

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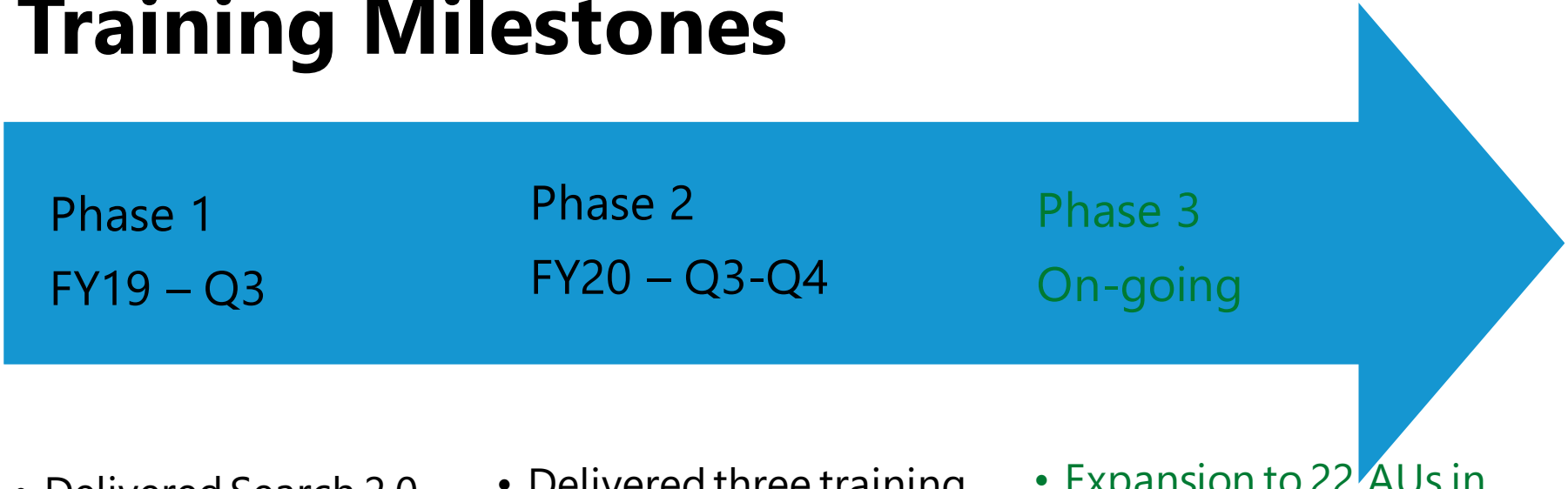
Search Workshop 2.0 - Overview

- **Software Partnership**
  - Roundtable- Dec 2013
  - Federal Reg. Notice- Jan 2014
  - Recommendations based on roundtable and Federal Reg. Notice comments
    - Search recordation
    - Additional training on best practices
    - Education on search resources
- **Execution of Search Workshop Pilot 1.0 – FY 2016 Q1-Q2**
- **Evaluation and Case Study of Search Workshop Pilot 1.0 – FY 2017**
  - Increase trend in clarity of rejections made based on MRF Review
  - Increase trend in awareness of STIC/NPL database resources for search availability
- **Phase 1: Search Workshop 2.0: FY 2018-FY 2019**
- **Phase 2: Search 2.0 Trainings on three Tracks: FY 2020**
- **Phase 3: Expansion Considerations: FY 2021**

Training Milestones



- Delivered Search 2.0 Hand-on workshop to ~500 Examiners in 7 AUs in each TC (TC 2100, 2400, 2600, 2800 and 3700)

- Delivered three training sessions on three tracks (i.e., keywords, CPC, NPL) to ~500 examiners in 7 AUs in each TC (TC 2100, 2400, 2600, 2800 and 3700)

- Expansion to 22 AUs in TC2100 for CPC track, to 9 AUs in TC2400 for all 3 tracks, and to all WGs in TC2800
- Expansion Considerations to other TCs and Workgroups

Search Workshop 2.0 – Phase 2: Training Objectives

- Increase likelihood of finding relevant prior art by applying a search loop framework to a Technology-focused example
- Develop and refine search concepts for Keyword, CPC and NPL tracks (by reviewing documents) and iteratively adjusting subsequent search queries
- Help examiners recognize and resolve potential issues among search queries by presenting effective techniques to monitor and adjust search queries

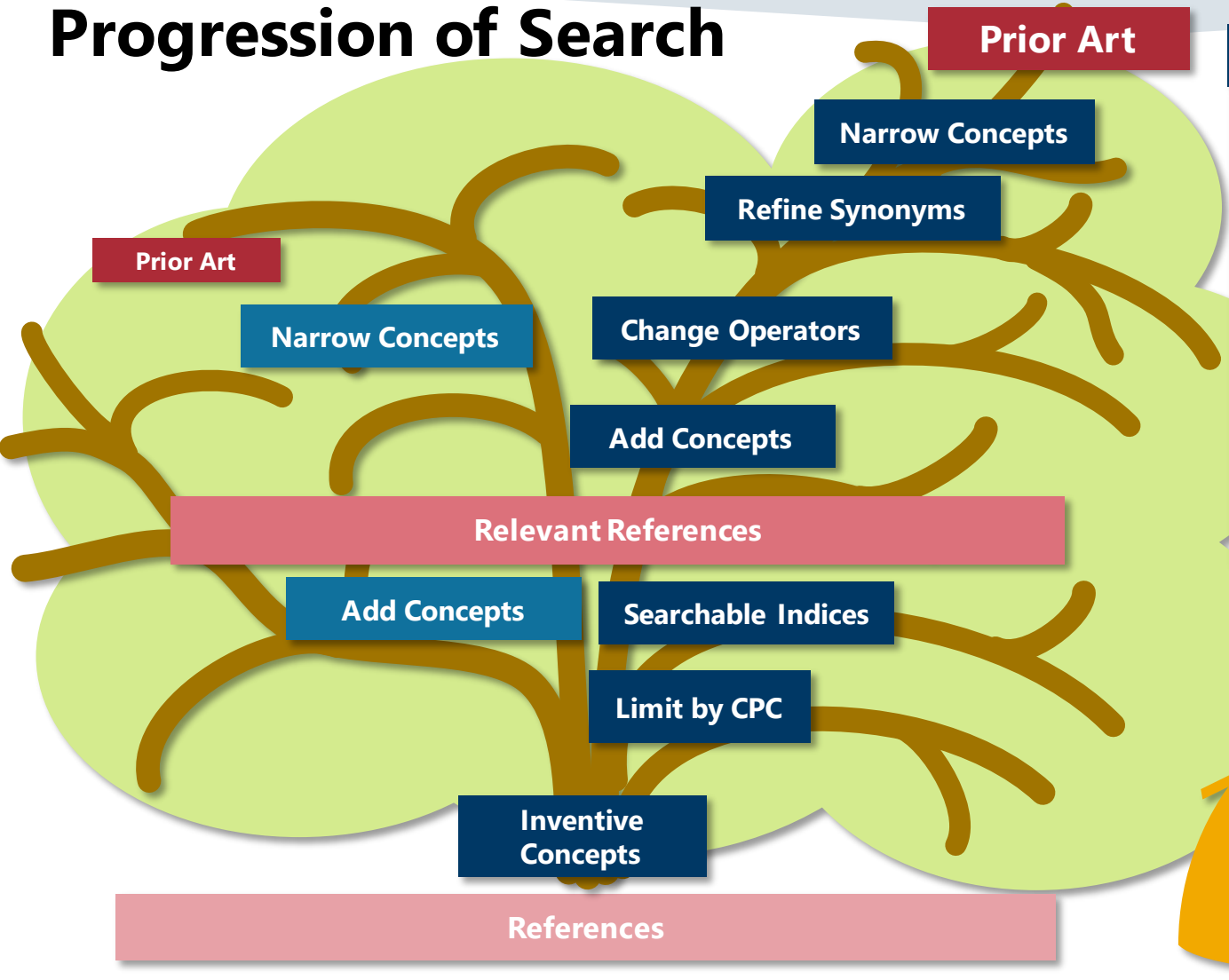
Search Workshop 2.0 – Methodology

- **What**: *Interactive search training with animations*
- **Who**: *Participants: ~35 AUs across five Technology Centers (TC2100, TC2400, TC2600, TC2800 and TC3700)*
- **Where**: *Online WebEx platform*
- **When**: *FY20 and FY21 (expansion consideration)*
- **Team/Resources**: *TC Directors, TC POCs, PM, TC SPEs, Subject mater experts (primary examiners), STIC Searchers, OPQAs (RQAS), OPLA and PTA*

Search 2.0 Characteristics

- *Progression of Search*
- *Visually demonstrating the progression of Search*
- *Search Loop Framework*
- *Post-search Self-assessment*

Progression of Search



Ways to narrow

- Add concepts
- Narrow concepts
- Change operators
  AND → SAME/WITH
- Limit by CPC Groups/Subgroups
- Exclude concepts
  Use NOT
- Reorganize concepts
- Limit by Date
- Many other options possible

Visually Demonstrating Search Progression

Prior Art

Multi Ch. Auth. | CPC | Indices

S3

(S1 AND S2) AND (((multi$4 ADJ channel)(two ADJ channel)(second ADJ channel)(out$1of$1band)(out ADJ4 band)(OOB$1)) **NEAR6** (authenticat$4 authoriz$5 log$4in$1)).*ab,ti,bsum.*

Hits: 692
Relevant:
At least 21

Limit by Searchable Indices

S2

S1 AND (H04L9/32$ H04L63/08$ G06F21/30-40 H04W12/06).CPC

Hits: 1866
Relevant:
at least 29

Limit by CPC

S1

(((multi$4 ADJ channel)(two ADJ channel)(second ADJ channel)(out$1of$1band)(out ADJ4 band)(OOB$1)) **NEAR6** (authenticat$4 authoriz$5 log$4in$1))

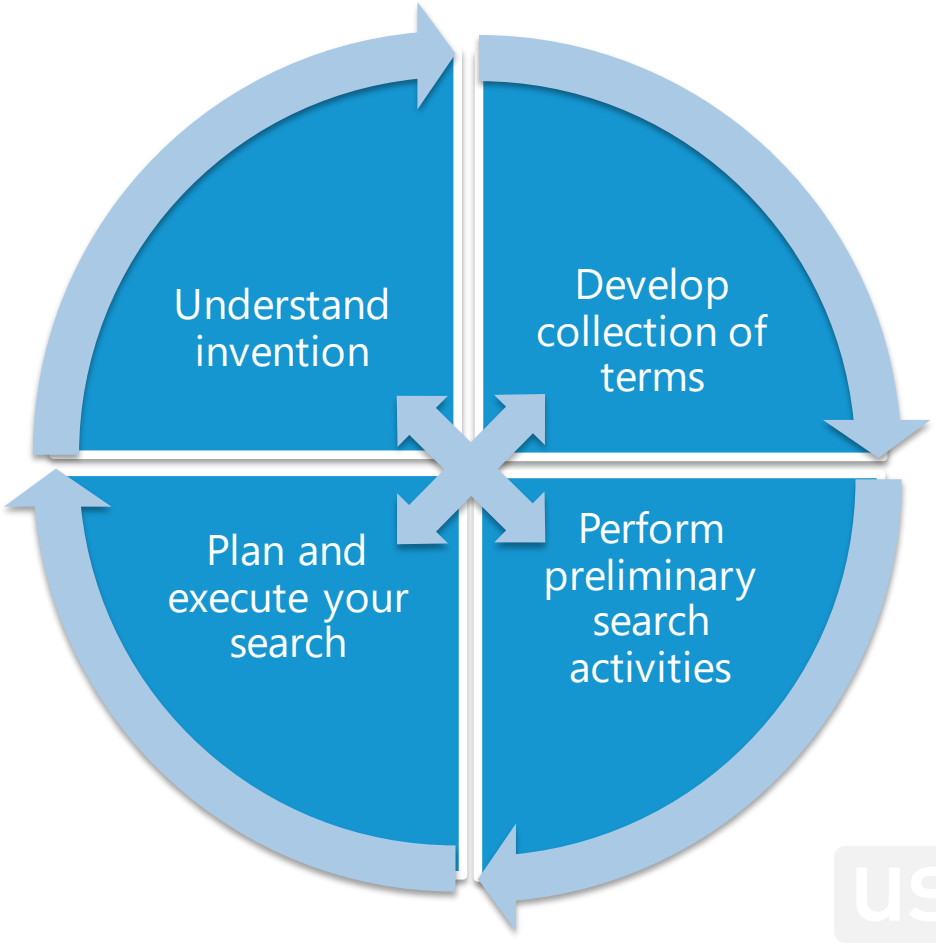
Hits: 3934
Relevant:
at least 34

Inventive Concepts

References

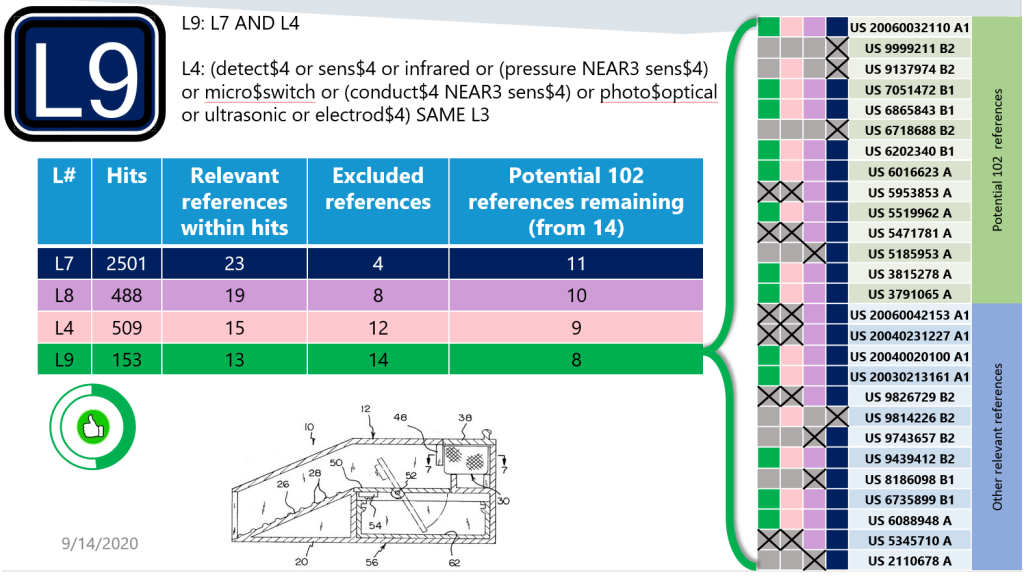
Search Framework

Iterative Search loop



Applying Search Framework

Case Study: Analyze Relevant References vs "Hits"

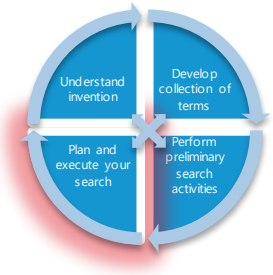


L#	Hits	Relevant references within hits	Excluded references	Potential 102 references remaining (from 14)
L7	2501	23	4	11
L8	488	19	8	10
L4	509	15	12	9
L9	153	13	14	8

By color-coordinating different searches, participants can visually see the effects of limiting searches.

- As denoted by the "X", participants see which queries eliminate relevant reference while reducing the number of "Hits"

Hits: Size of the "haystack"
Relevant references: Number of relevant documents within the "haystack"



Self-assessment tool

Conducting your search

Using CPC - Classification searches[i]

1. Indicate your degree of confidence that you used the appropriate CPC symbols

Extremely confident	Very confident	Not Very confident	Total lack of confidence	N/A
4	3	2	1	N/A

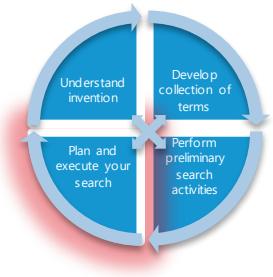
If Total lack of confidence: Why? What would improve your confidence?

_____

_____

2. I found my CPC symbols using the following tools:

- ☐ CPC QN
- ☐ CAT tool (Classification Allocation Tool) (Google Chrome only)
- ☐ CPC Crosswalk
- ☐ EAST Classification Robust Query Builder
- ☐ Prior of record (e.g., International Search Report)
- ☐ Other: _____



Self-assessment tool

3. Indicate your degree of confidence that your CPC queries have included ranges to include the corresponding child (indent) symbols (Example: When CAT tool suggests G06F 17/30292, the EAST query is: G06F17/30292-30297.cpc.)

Extremely confident	Very confident	Not Very confident	Total lack of confidence	N/A
4	3	2	1	N/A

G06F 17/30289	... {Database design, administration or maintenance}
G06F 17/30292	.... {Schema design and management}
G06F 17/30294	..... {with details for data modelling support}
G06F 17/30297	..... {with details for schema evolution support}
G06F 17/303	.... {Database migration support}
G06F 17/30303	.... {Improving data quality; Data cleansing}
G06F 17/30306	.... {Database tuning (G06F17/30339 takes precedence; database performance monitoring G06F11/3409)}
G06F 17/30309	.... {Managing data history or versioning (querying temporal data G06F17/30551; querying versioned data G06F17/30548)}

Using Keywords – Text Searching[ii]

4. Indicate your degree of confidence that you used the appropriate keywords[iii]

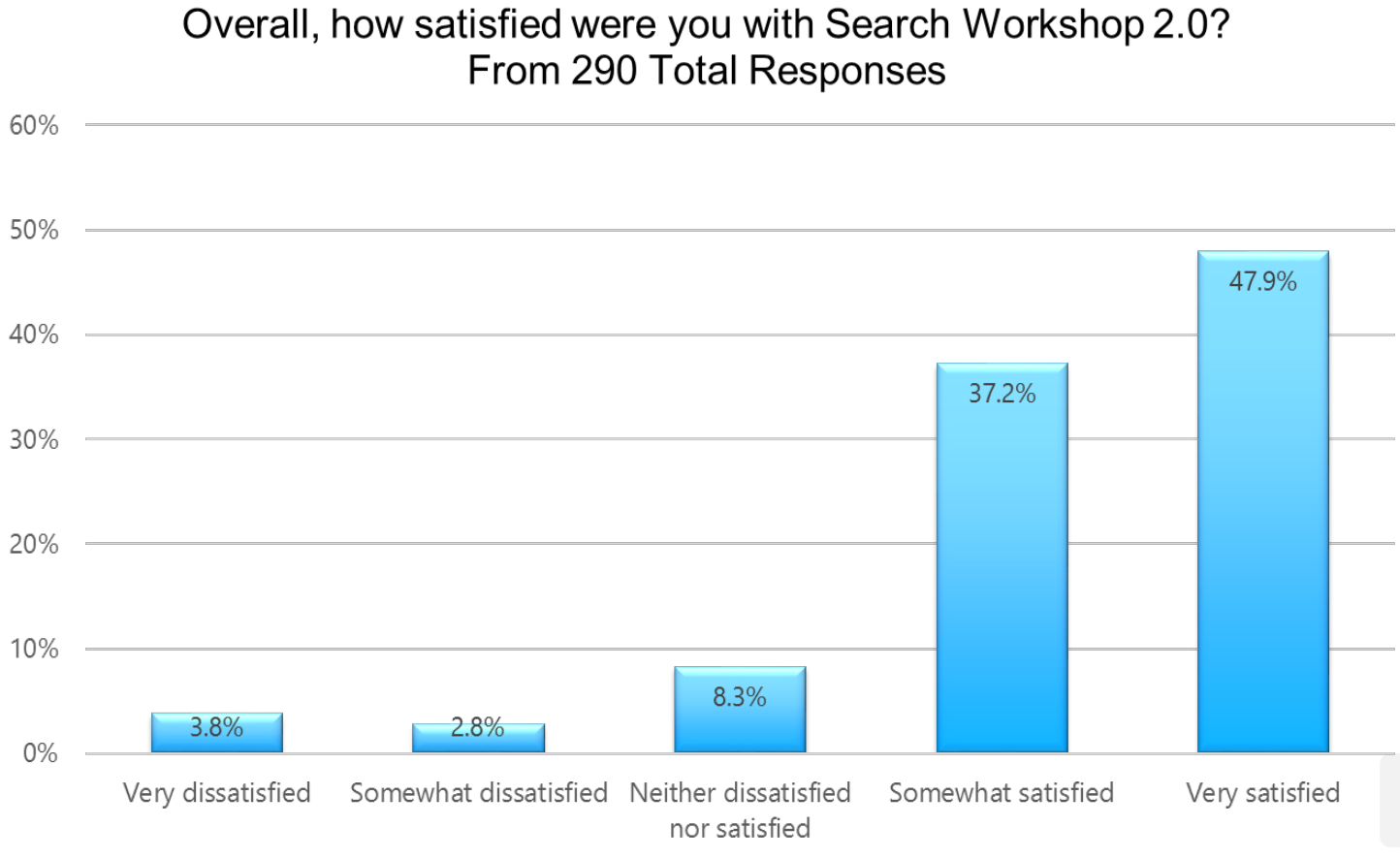
Extremely confident	Very confident	Not Very confident	Total lack of confidence	N/A
4	3	2	1	N/A

If Total lack of confidence: Why? What would improve your confidence?

Surveys and Evaluations

- **Participant Surveys (4 total)**
  - Phase 1: After the Initial Workshop 2.0 training
  - Phase 2: After each of the 3 unique tracks for:
    - Keywords,
    - CPC, and
    - NPL
- **Phase 2: OPQA Search Evaluations (2 total)**
  - "Before" the Initial workshop 2.0 training, and
  - "After" the completion of the 3 tracks

Survey Data – Phase 1 Workshop



Phase 2: Three Training Tracks

Technology Specific Example for Three Training Tracks

- Keyword Track

  Articulate search terms and conduct search based on keywords using internal EAST search tool

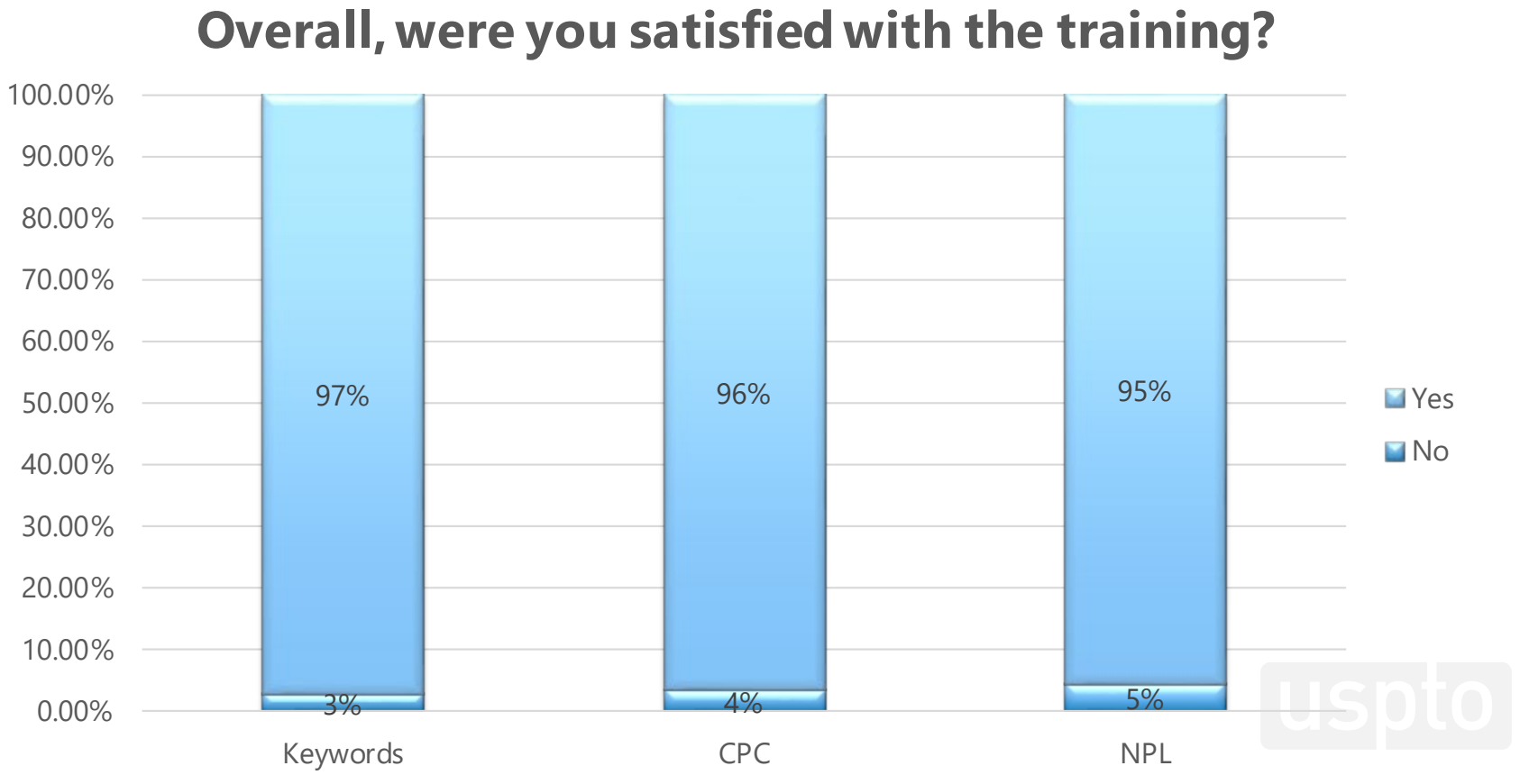
- Classification Track

  Articulate search terms and conduct search based on CPC classification using internal EAST search tool

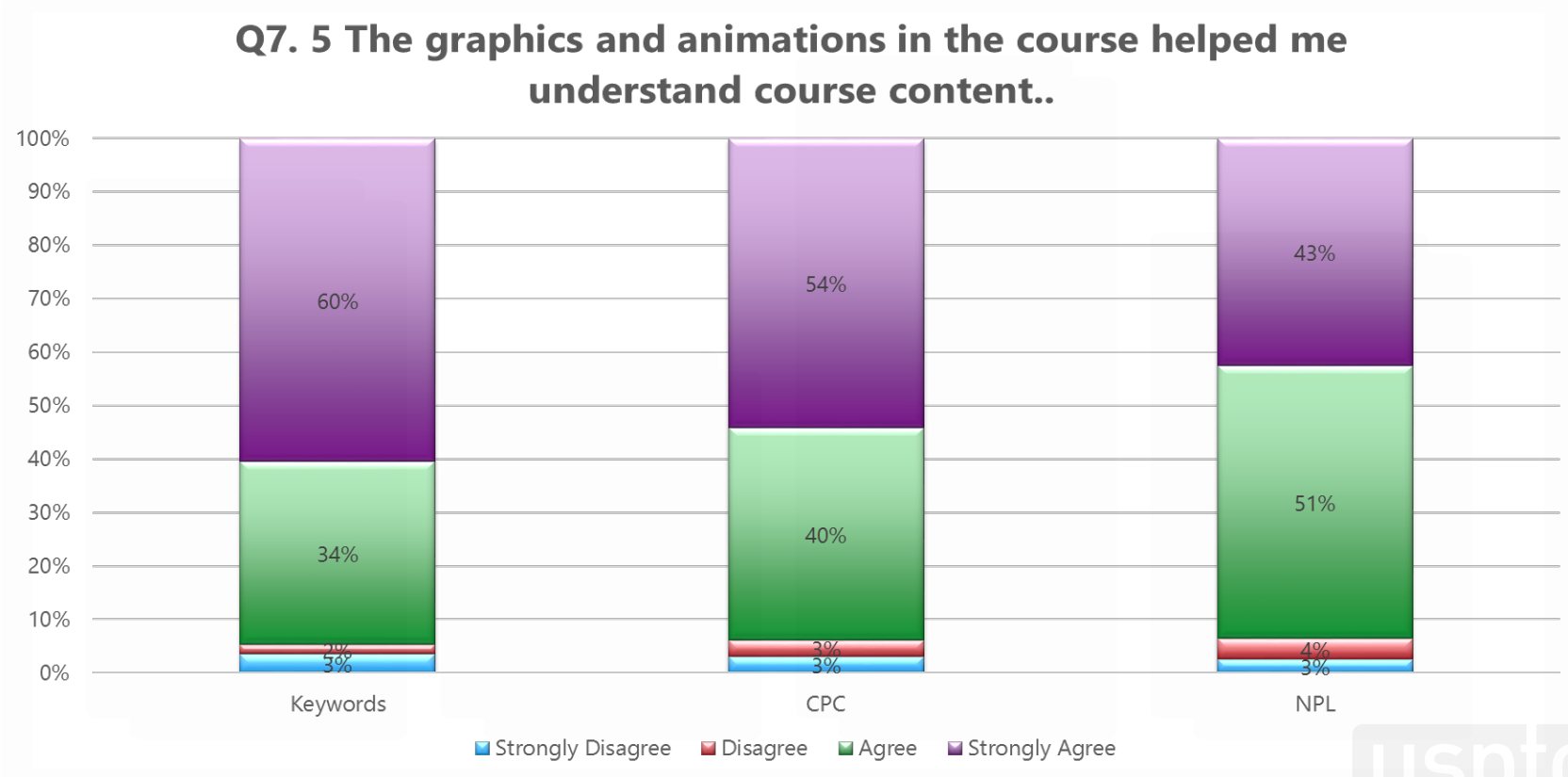
- NPL Track

  Articulate search terms and conduct search utilizing NPL Search Engines (i.e., IP.com, GoogleScholar, IEEE, etc.;)

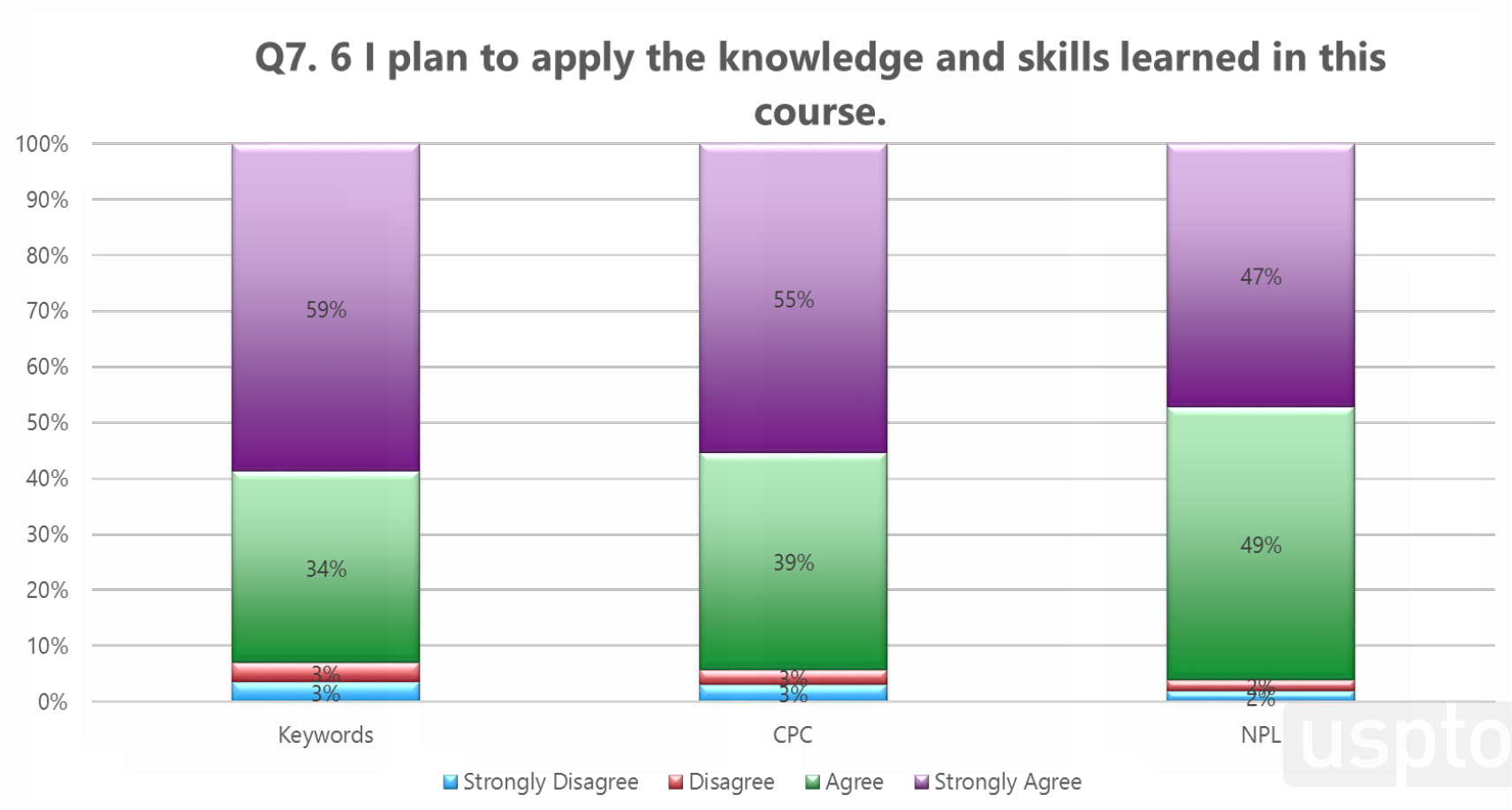
Survey Data – Technology specific Tracks



Survey Data – Technology specific Tracks



Survey Data – Technology specific Tracks



Survey - Takeaways

- Phase 2: Search Workshop had satisfaction scores ranging from 95-97%
- 93-96% agreed/strongly agreed that “I plan to apply the knowledge and skills learned in this course” for the technology-specific tracks (Keywords, CPC, and NPL)
- The Phase 2 (keyword, CPC, and NPL) technology-specific tracks performed better than the Phase 1

Search Evaluations

- **"Before" and "After" reviews:**
  - "Before" reviews were sampled prior to the initial Search Workshop 2.0 session (May 2019)
  - "After" reviews were sampled after the completion of the 3 tracks (August 2020)
- **Evaluated Examiner's search strategy and results form (e.g., EAST Search History queries)**
- **Reviewed Search information (e.g., Documented NPL databases)**

Phase 2: Evaluation Takeaways

- **NPL documentation on SRFW increased to 43% (+12 percentage points) where at least one NPL source cited**
- **Increased use of appropriate CPC symbols (+6 percentage points)**
- **Increased of combining CPC with Keywords (+12 percentage points)**
- **Searches used more synonyms**
- **In general, the searches reflected more iterative search behaviors due to:**
  - Fewer Home-Run searches
  - Fewer prematurely abandoned search paths
  - Fewer restrictive keywords and CPC symbols

Search 2.0 - Keyword Track

TC 2400 – User Authentication Example

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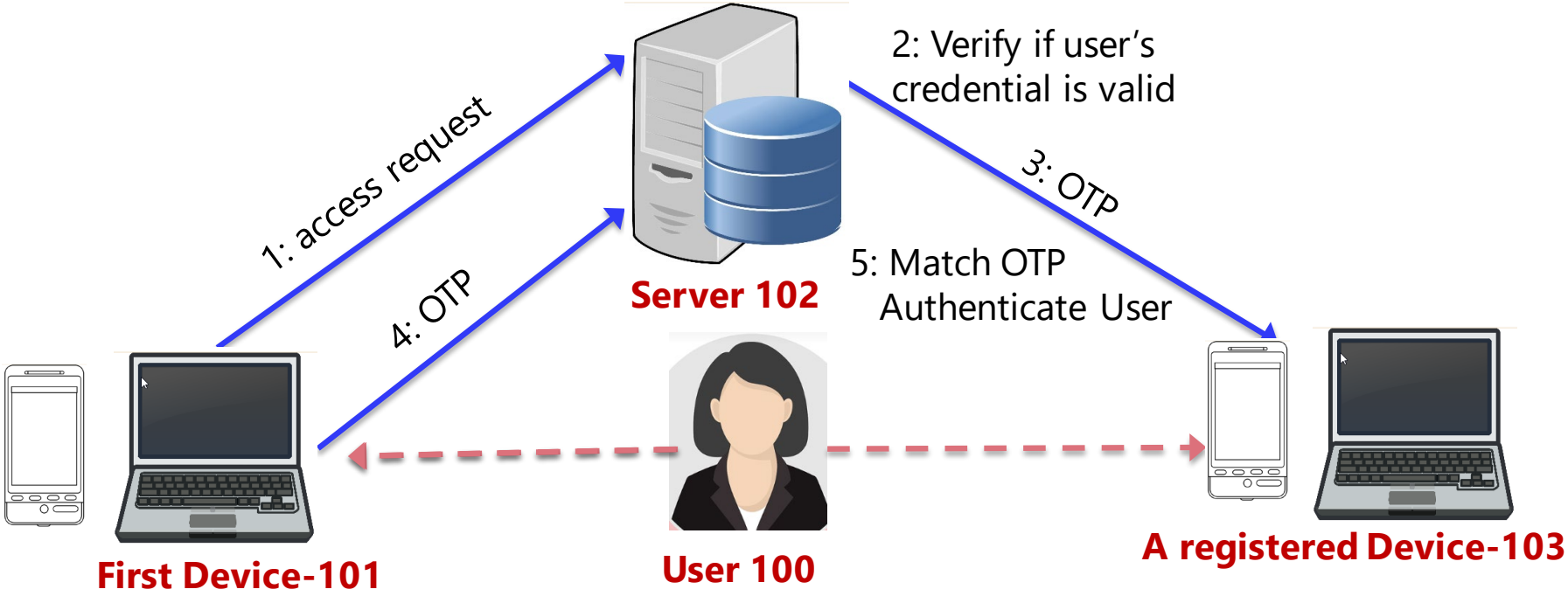
Understand the Invention

[0006] *The invention is directed to a system and method for securely authenticating user using* ***multi-channel authentication***.

[0007] *In one aspect of the present invention, a user 100, who has already* ***created a valid account and registered his/her mobile device 103 to the server 102****, is able to access to network resources after successfully authenticating in both in-band and out-of-band authentications.*

[0008] *User 100, may access to a web browser and sends a login request to a server using* ***in-band communication channel between the user device 101 and server 102***. *The server 102 performs an initial authentication to authenticate user 100 using user's credential (i.e., username and password) including in the login request. Server 102 validates user's credential; if user's credential is valid****, the server will generates an authentication code (e.g., one-time passcode (OTP)) and sends the authentication code to the mobile device 103 via an out-of-band channel***. ***User 100 enters the authentication code*** *into a verification webpage displayed on the user device 101 and submits the authentication code to the server 102 for authentication. After receiving the authentication code from user device 101, server 102 will validate the authentication code. User 100 will be granted access to network resource if the received code/OTP* ***matches*** *with the code/OTP sent to the mobile device*.

Understand the Invention



1: User 100 sends a login request including username password to server 102 using device 101
2: Server 102 validates user's credential;
3. If user credential is valid, server 102 generates and sends an OTP to a registered mobile device 103;
4. User sends the OTP, using the first device 101, to server 102 for authentication.

Understand the Invention

Claim 1: *A method for authenticating a user using multi-channel authentication, the method comprising:*

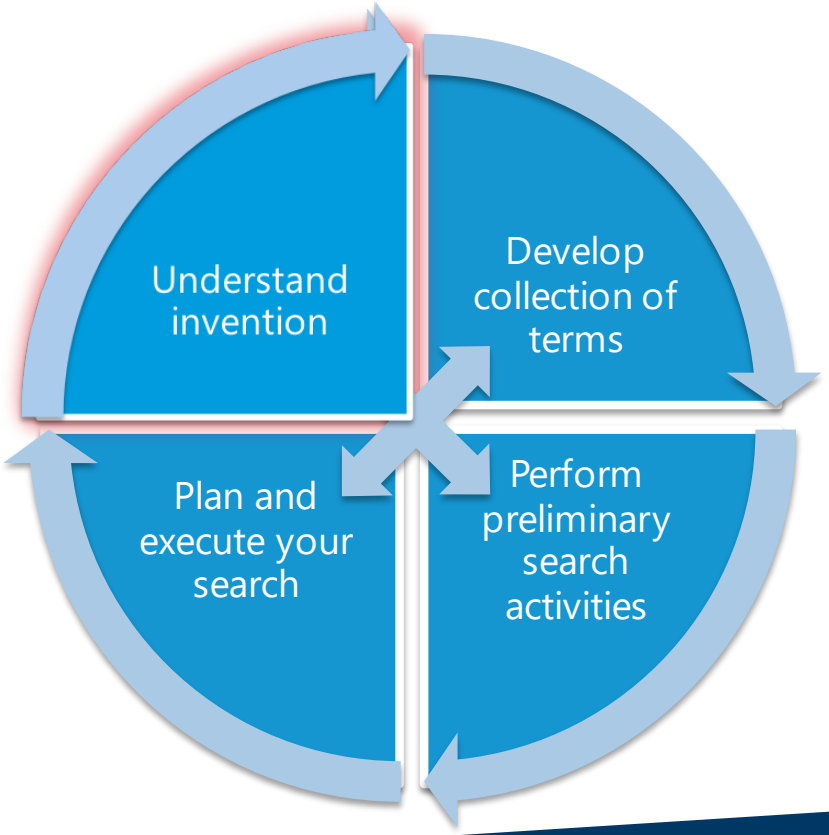
receiving a login request from a first device,
the login request includes user's credential;

in response to a verification that user's credential is valid,
generating an authentication token; and
sending the authentication token to a registered mobile device;

receiving a response from the user; and

authenticating the user based on the received response.

Understand the Invention



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Understand the Invention

Reading Claims – Identify Main Claimed Limitations

Claim 1: *A method for **authenticating a user** using **multi-channel authentication**, the method comprising:*

*receiving a **login** request from a first device,*
*the login request includes **user's credential**;*

in response to a verification that user's credential is valid,
generating an authentication token; and
***sending** the **authentication token** to a **registered mobile device**;*

*receiving a **response** from the user; and*

***authenticating the user** based on the received response.*

Understand the Invention

Reading Claims – Understanding Claimed Limitations

Claim 1: *A method for* ***authenticating a user*** *using* ***multi-channel authentication***, *the method comprising:*

What is "multi-channel authentication"?

in response to a verification that user's credential is valid,

generating an ***authentication token***; *and*

sending *the* ***authentication token*** *to a* ***registered mobile device***;

What is "authentication token"?

What is "registered mobile device"?

Understand the Invention

Understand Claimed Limitations – Claim Diagram

Claim 1: *A method for **authenticating a user** using **multi-channel authentication**, the method comprising:*

Let's draw a claim diagram

Determine if the claim fully describes the invention!

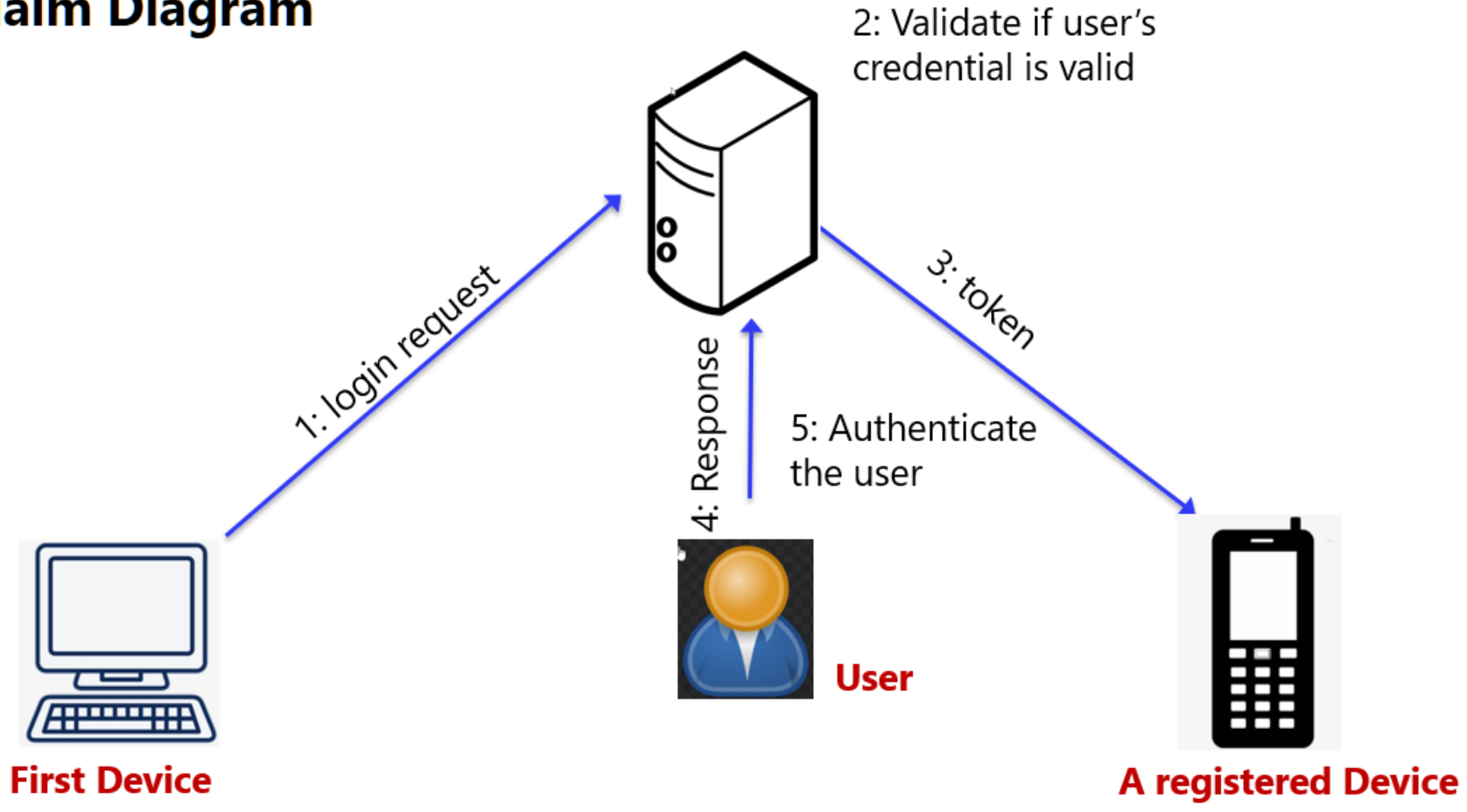
in response to a verification that user's credential is valid,

generating an authentication token; and

Note: *Most of the time, independent claims are broad, dependent claims may recite limitations that better describe the invention.*

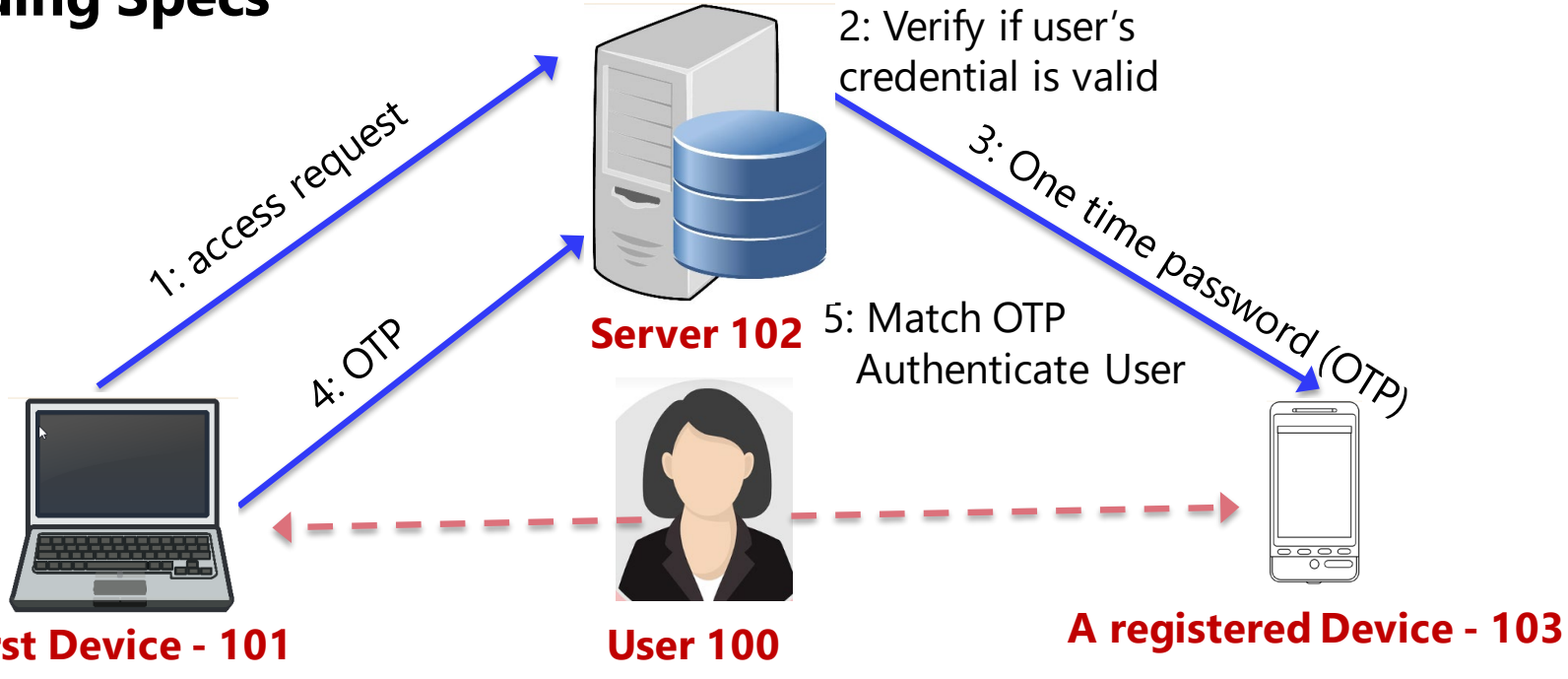
Understand the Invention

Claim Diagram



Understand the Invention

Reading Specs



1: User 100 sends a login request including username password to server 102 using device 101

2: Server 102 validates user's credential;

3. If user credential is valid, server 102 generates and sends an OTP to a mobile device 103;

4. User sends the OTP, using device 101, to server 102 for authentication.

Understand the Invention

Reading Specs

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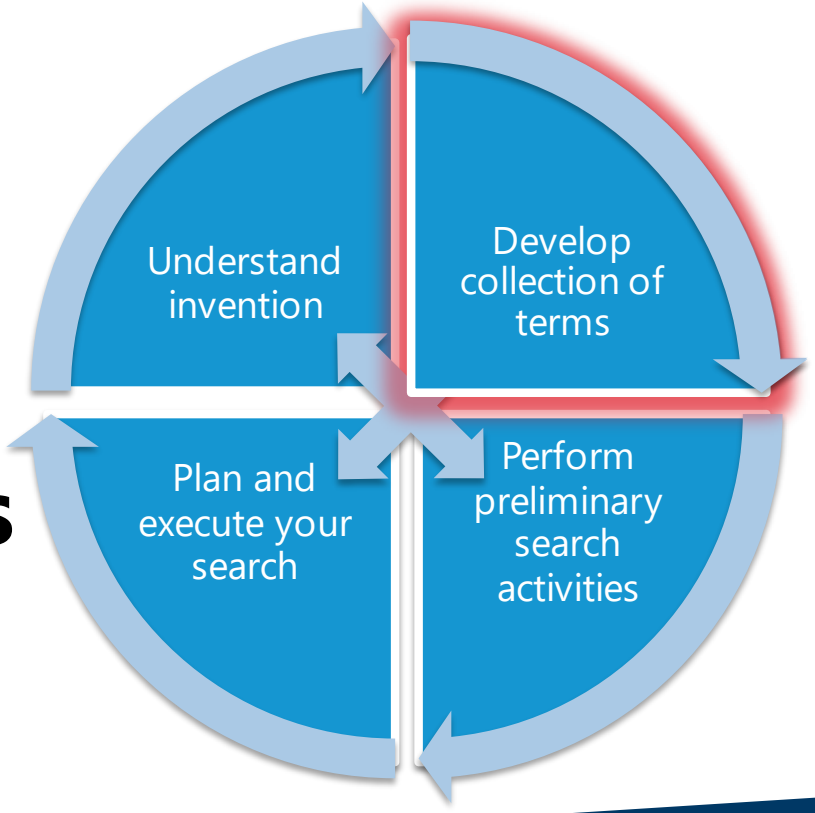
Develop Collection of Terms



Understanding Claimed Limitations

How spec defines the claimed limitations

*Claim 1: A method for enhancing **user's authentication** using **multi-channel authentication**, the method comprising:*

What is "multi-channel authentication"?

Authenticate using two channel communications
- *In-band auth.*
- *Out-of-band auth.*

in response to a verification that user's credential is v

*generating an **authentication token**; and*

What is "authentication token"?

OTP, code, etc.,

*receiving **a response** from the user; and*

***authenticating the user** based on the received*

What is "registered mobile device"?

Mobile device registered and associated with user's account

Develop Collection of Terms

Identify *Synonyms* for main limitations

Claim 1: *A method for **authenticating** a user using **multi-channel authentication**, the method comprising:*

*receiving a **login** request from **a first device**, the login request includes user's credential;*

in response to a verification that user's credential is valid,

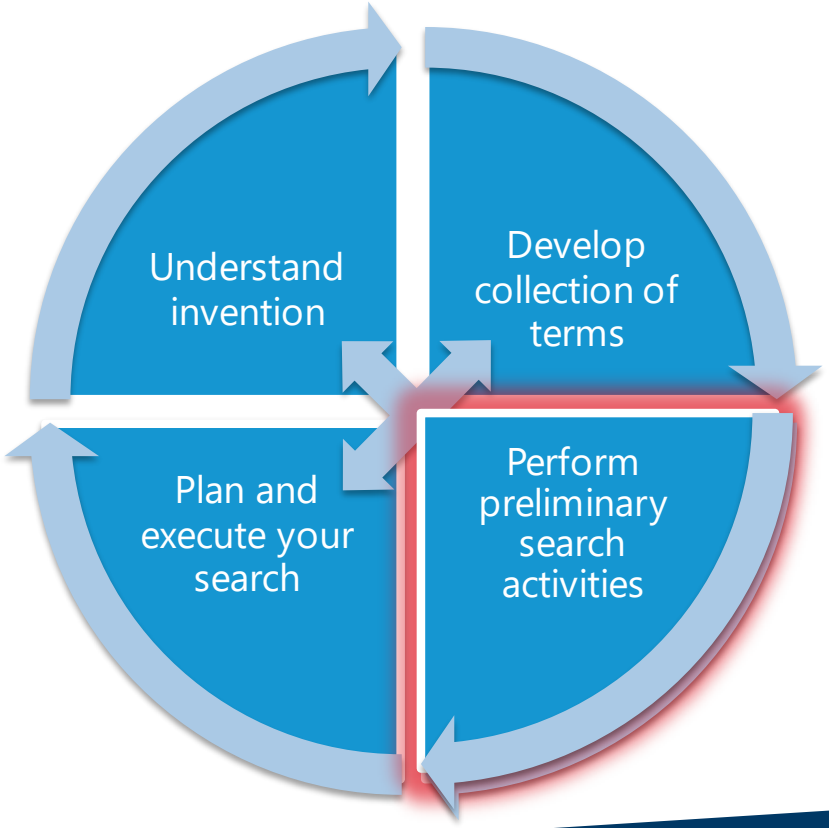
*generating an **authentication token**, and*

*sending the **authentication token** to a **registered mobile device**;*

receiving a response from the user; and

authenticating the user based on the received response.

Perform Preliminary Search Activities



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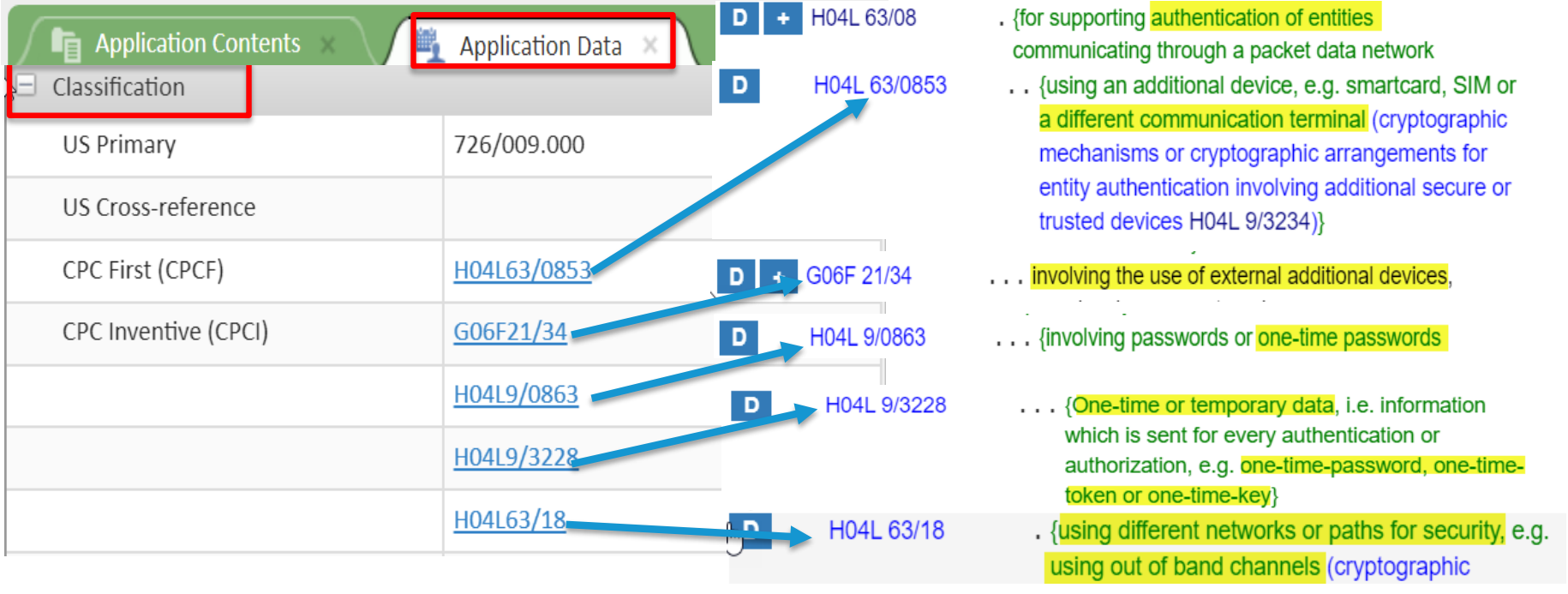
Perform Preliminary Search Activities

- Inventor name/assignee search in EAST/WEST/PALM
- Review related documents
  - *Family applications*
  - *Foreign search reports (i.e., PCT search reports, Global Dossier),*
  - *IDS, etc.,*
- Identify CPC symbols – class/subclass – group/subgroup

Perform Preliminary Search Activities

Identify Corresponding CPC Class/Subclass

View corresponding CPC class/subclass from DAV and/or CPC Tools (i.e., CAT, CPC Scheme Navigator, etc.,)



Plan and Execute Your Search

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Plan the Search

Inventive concept – Spec. vs. Claims – BRI of the Claims

Inventive concept

Authenticate user using multi-channel Auth.

Generate an OTP; Send the OTP to a registered device via out-of-band channel

Receive a code/OTP from the 1st device; Authenticate user if the code matches with the OTP

Limitations recited in the claims

Receive a login request from a first device
Send auth. token to a registered mobile device
Authenticate user based on response

Multi-channel Auth. is recited in the preamble

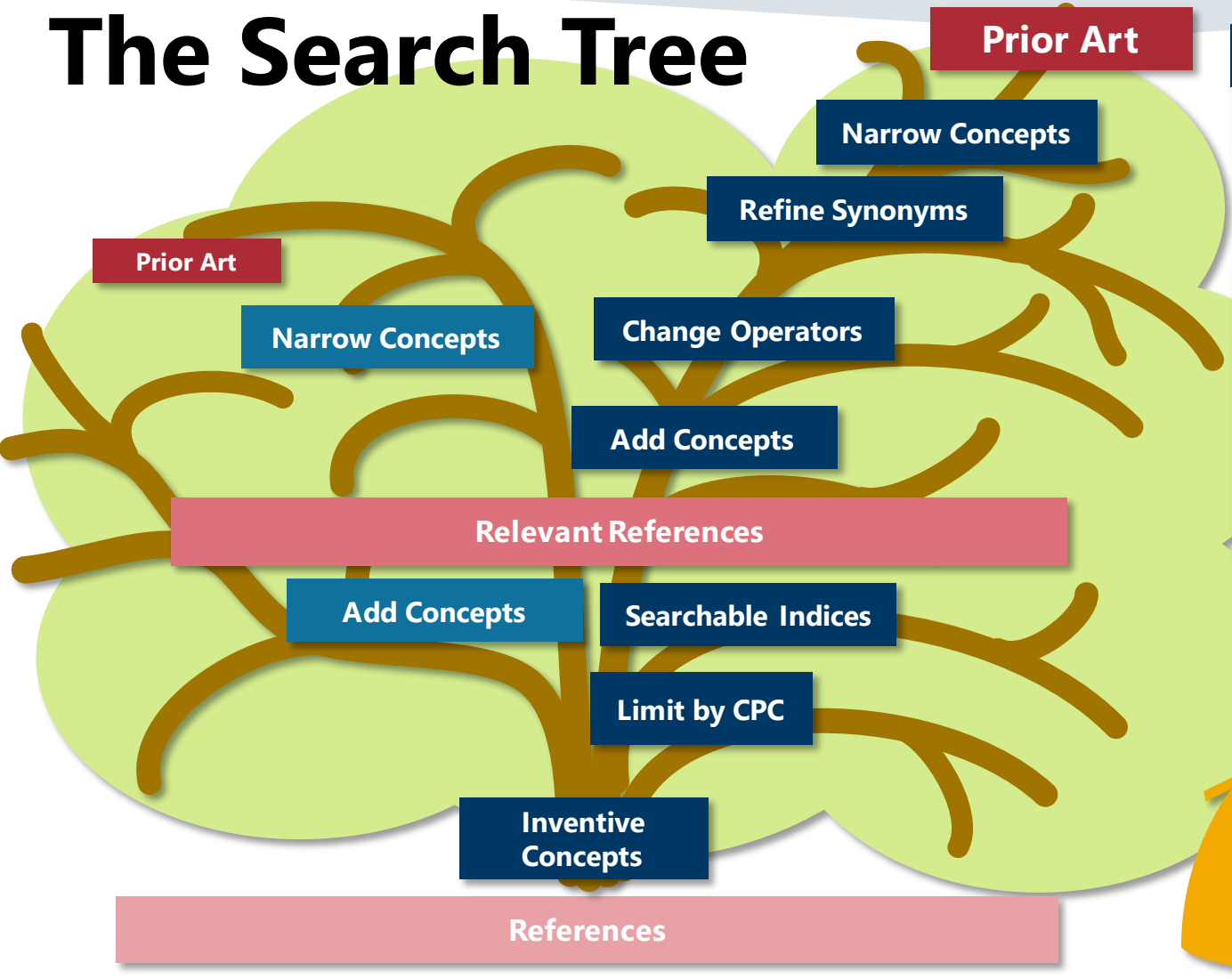
Generate an authentication token;
Send auth. token to a registered mobile device

OTP and 'out-of-band' are not recited in the claim
Auth. token could be anything; It's broader than OTP

Receive a response;
Authenticate user based on the response

Token/OTP is sent from the 1st device is not recited;
Matching OTP is not recited in the claim;
A response in general - It's not necessary the OTP

The Search Tree



Ways to narrow

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  Use NOT
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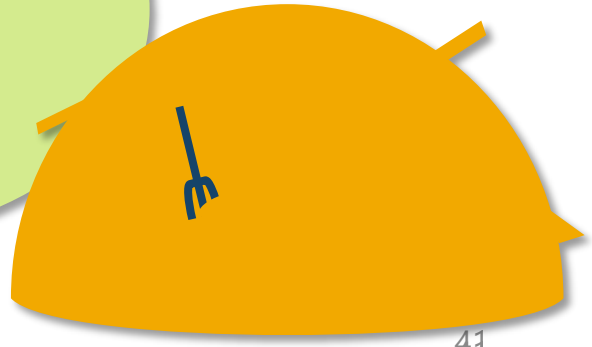
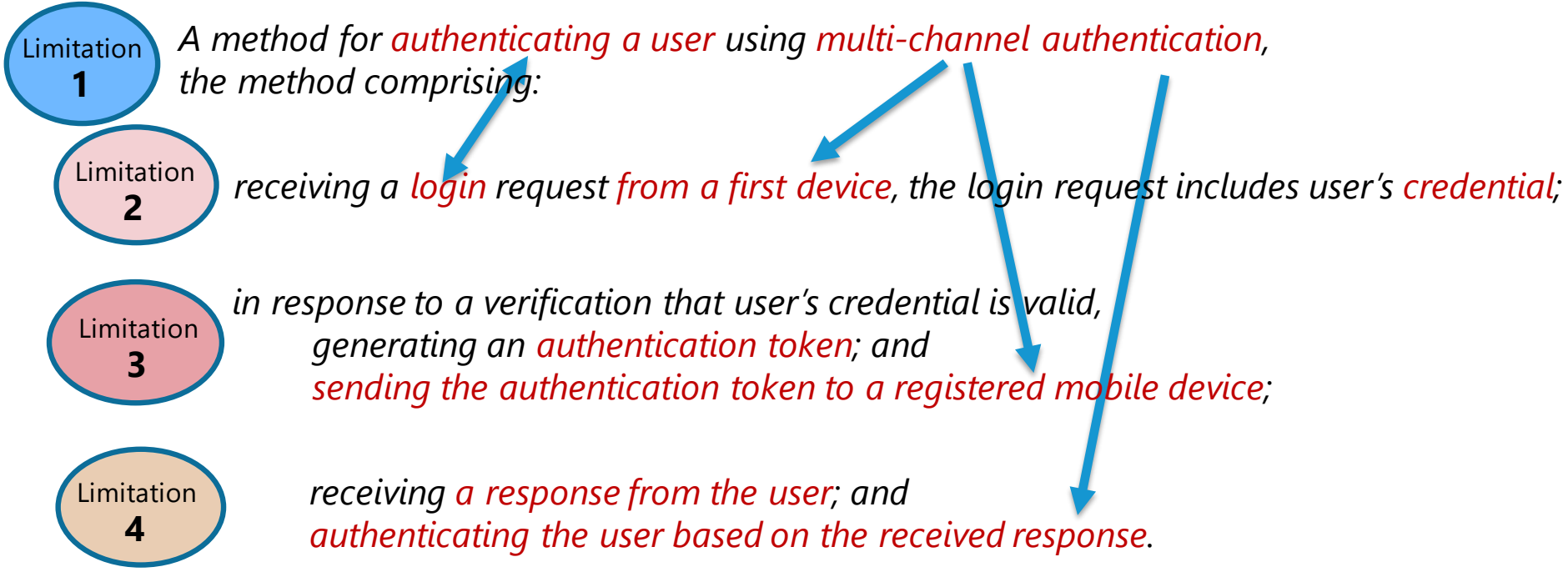
- Limit by Date
- Many other options possible



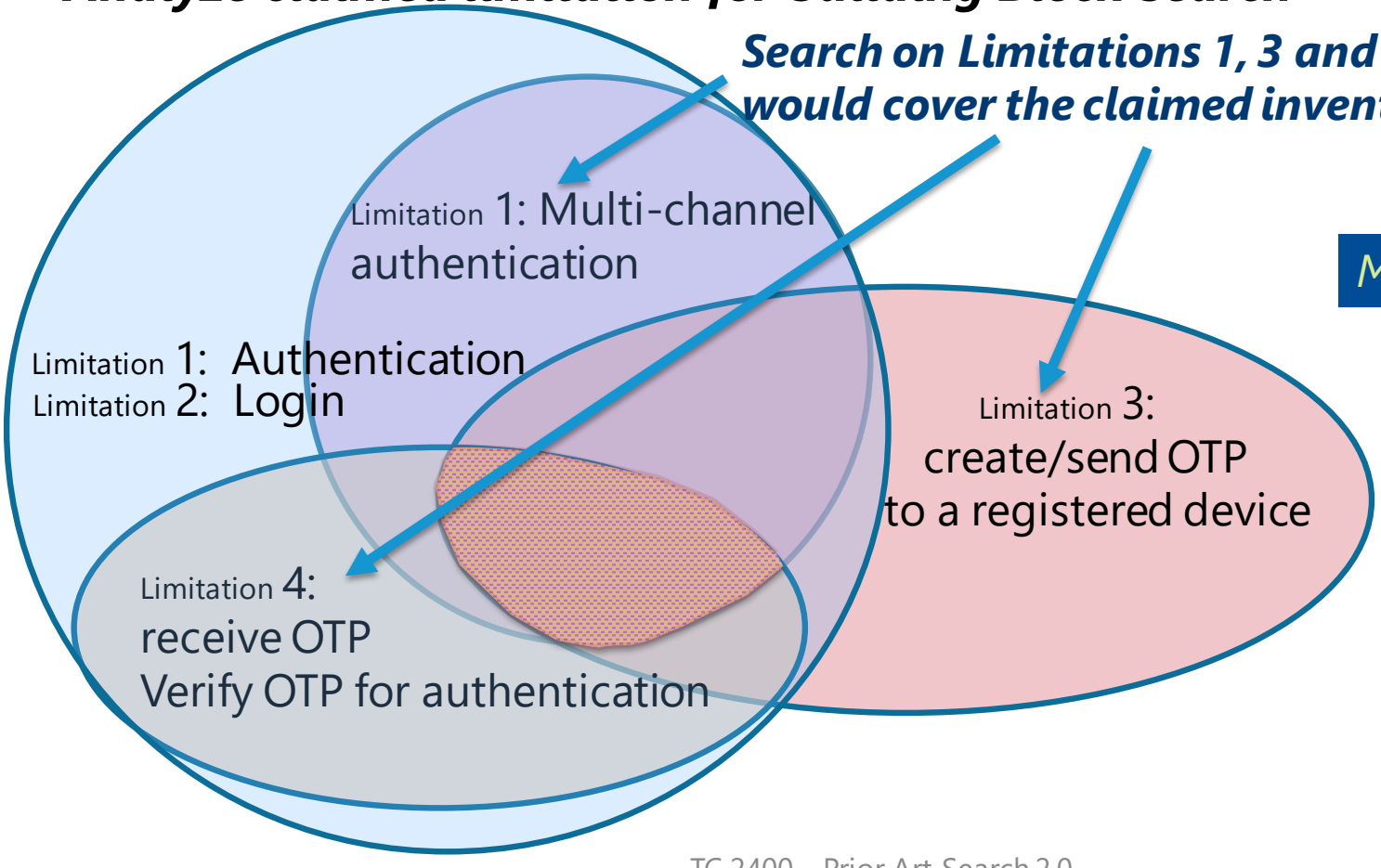
Plan the Search

Analyze claimed limitations for building Block Search



Plan the Search

Analyze claimed limitation for building Block Search



Plan the Search

Building Block for Inventive Concept – Searchable Indices

Inventive Concept

Limitation **1** ***Multiple Channel Authentication***

Multiple channel
Two/second channel
Out-of-band, OOBA

Multiple Factor,
Different channel
In-band

NEAR6

Authentication
Authorization - Login

Verify, Validate,
Access Control

(((multi$4 ADJ channel) (two ADJ channel) (second ADJ channel)(out$1of$1band)
(out$ ADJ4 band)(OOB$1)) NEAR6 (authenticat$3 authoriz$5 log$3in$1)) ***.ab,ti,bsum.***

Plan the Search

Building Block for claimed limitations

Limitation **3**

in response to a verification that user's credential is valid, generating an authentication token; and

***sending** the authentication **token** to a registered **mobile device**;*

Sending
Transmitting, Submitting, receiving
Communicating Forwarding

NEAR6

Token
PIN, OTP, code, One time password/code
Cookies, secret, key, nonce, ticket, pass-code, certificate, random, badge

WITH

Device
Mobile, phone PDA, laptop, handheld
PC, computer, wearable, tablet,

((validat$3 verify$3 authenticat$3 log$4in$1) NEAR6 (pass$1word$1 (pass ADJ word) credential user biometric))

WITH/SAME/AND

((send$3 transmit$4 submit$4 receiv$4) NEAR6 (token code PIN OTP (one ADJ time ADJ pass$6)) WITH (device mobile phone PDA laptop))

Plan the Search

Building Block for claimed limitations

Limitation **4** *authenticating the user based on the received response;*

NEAR6

Match

Verify, Validate

Compare, Valid

Token

PIN, OTP, code,
One time password/code

Cookies, secret, key, nonce, ticket, pass-code, certificate, random, badge

WITH

authenticate

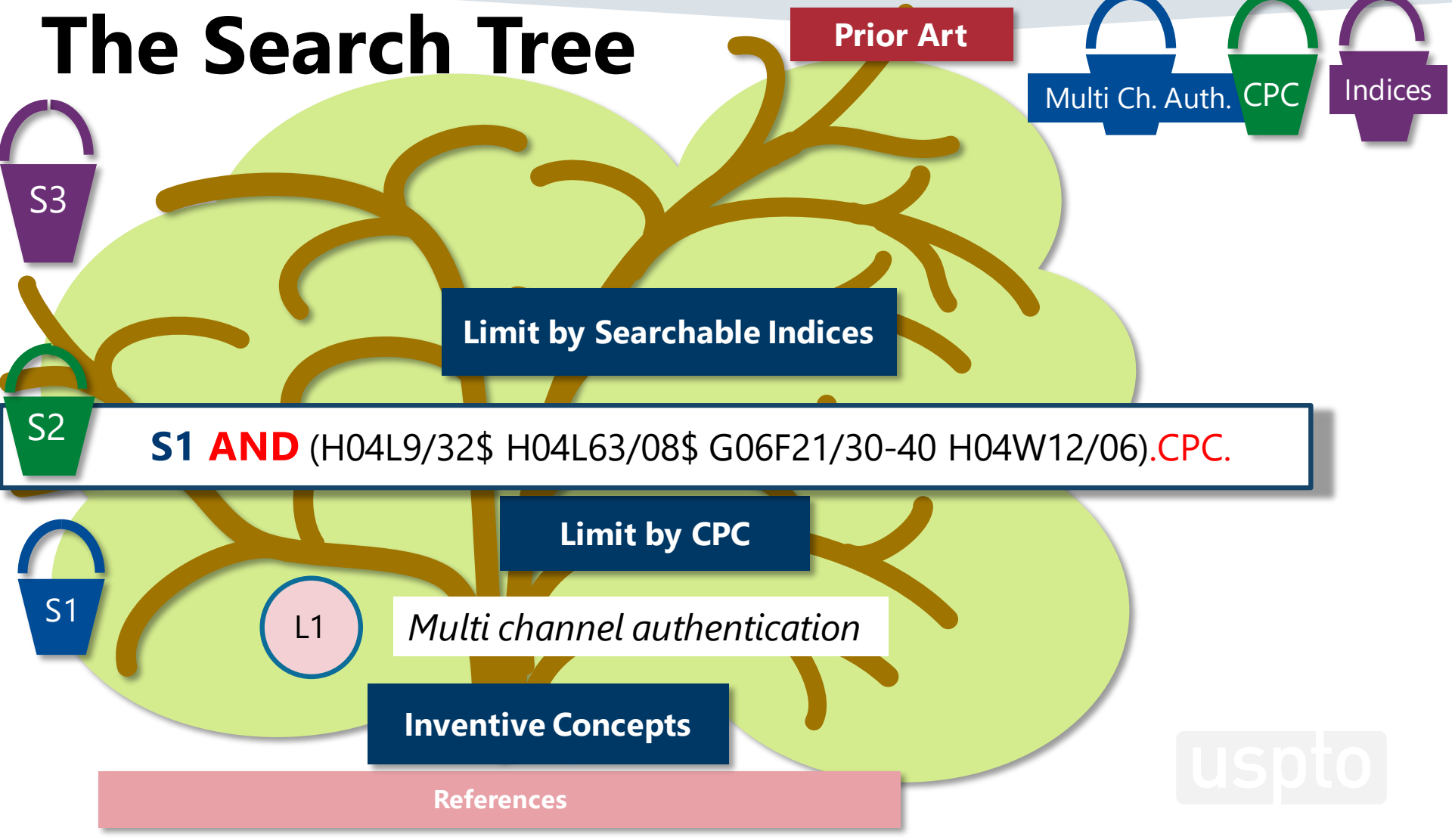
Authorize, Login, Grant

Validate, Verify, Access Control

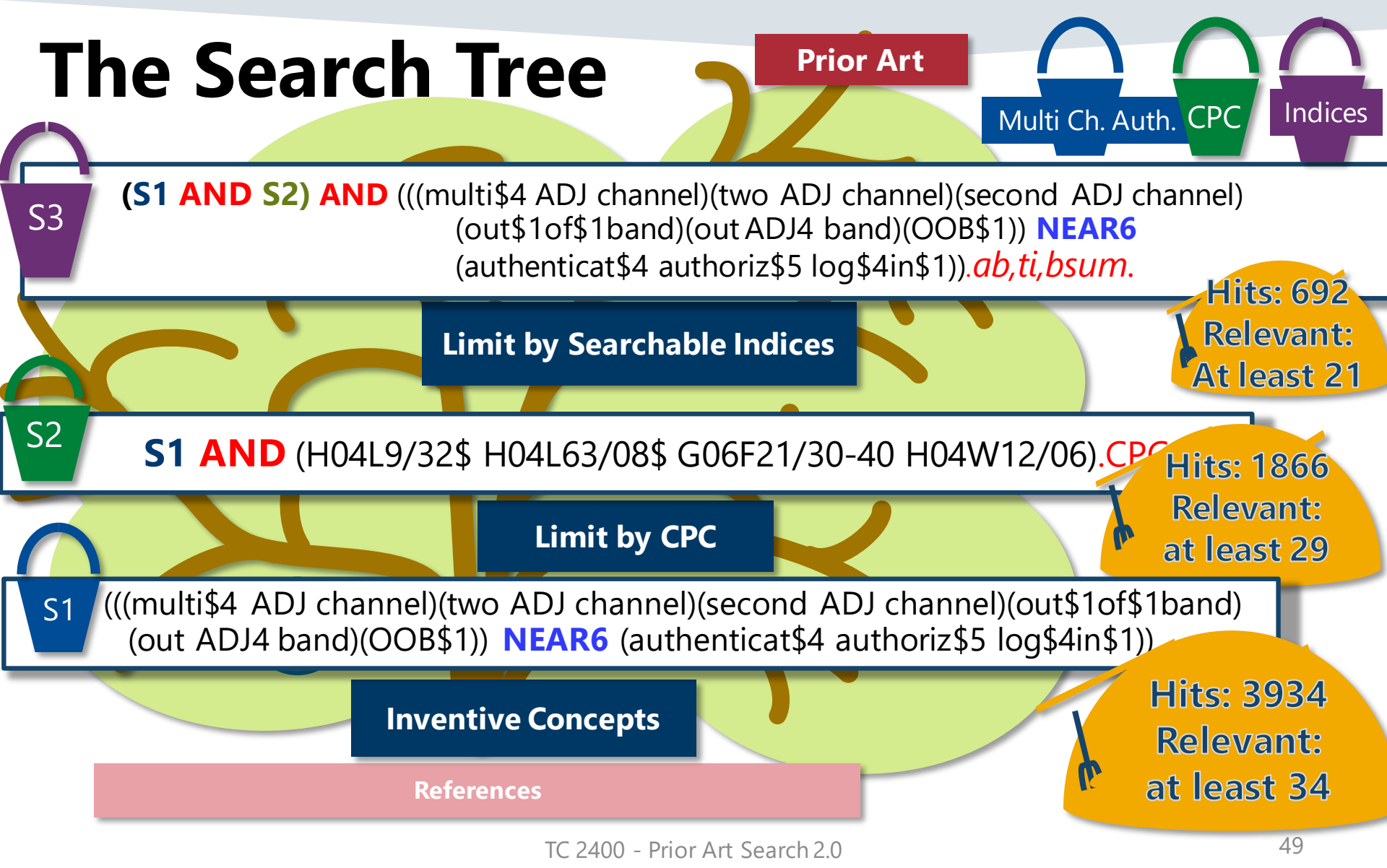
((match$3 verify$3 validate$3) NEAR6 (token code PIN OTP (one ADJ time ADJ pass$6)) WITH (authenticate$3 authoriz$5 grant$3)

Conduct Search

The Search Tree

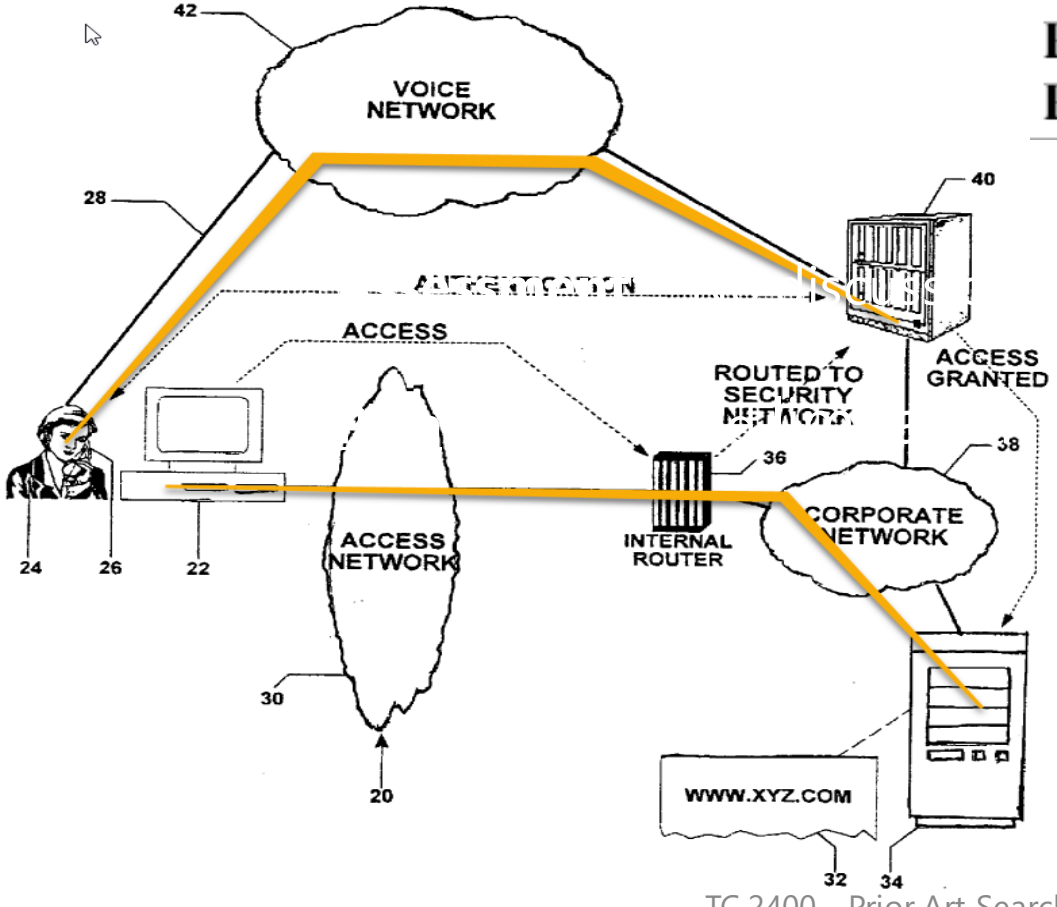


The Search Tree



Conduct Search – Text Search

Evaluate Search - Quick Look at References –



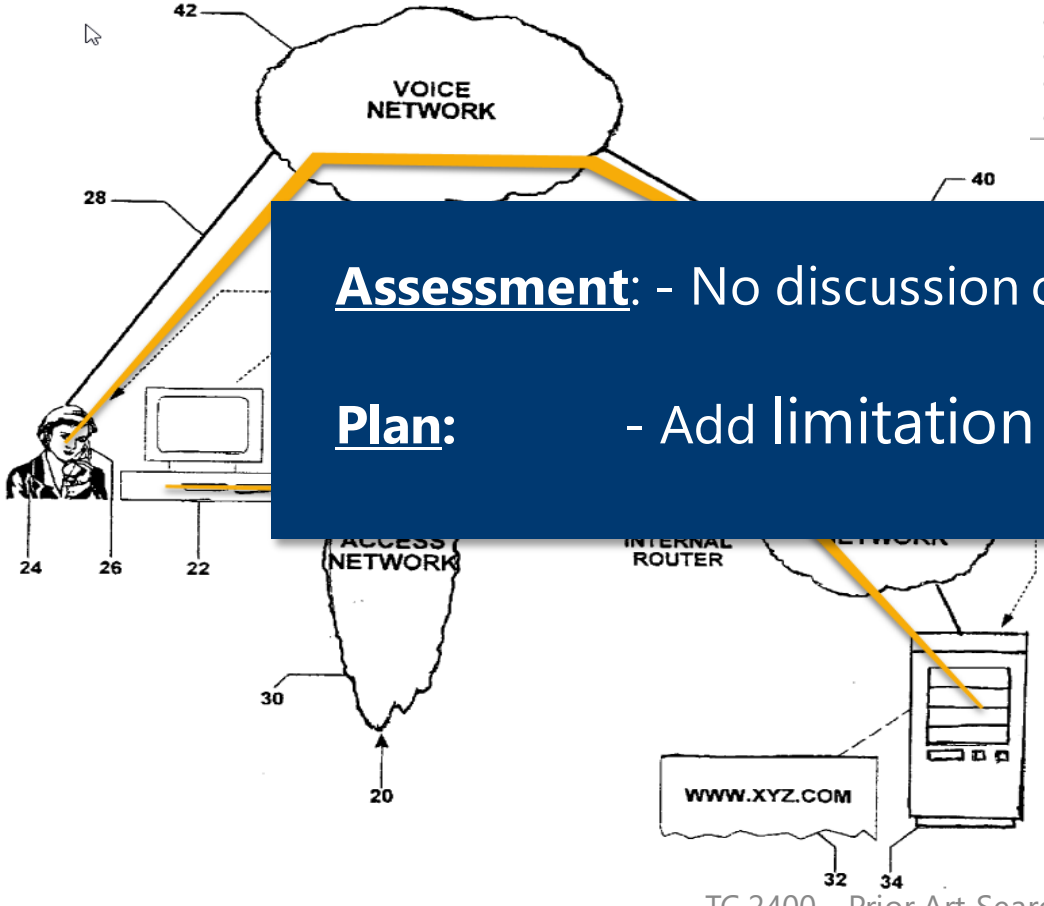
Pub. No.: US 2006/0041755 A1
Pub. Date: Feb. 23, 2006

This reference fails disclose claimed limitations.

Although there are two authentication channels, the out of band authentication is entirely outside the user device and ***there is no discussion of Token/OTP!***

Conduct Search – Text Search

Evaluate Search - Quick Look at References –



Pub. No.: US 2006/0041755 A1
Pub. Date: Feb. 23, 2006

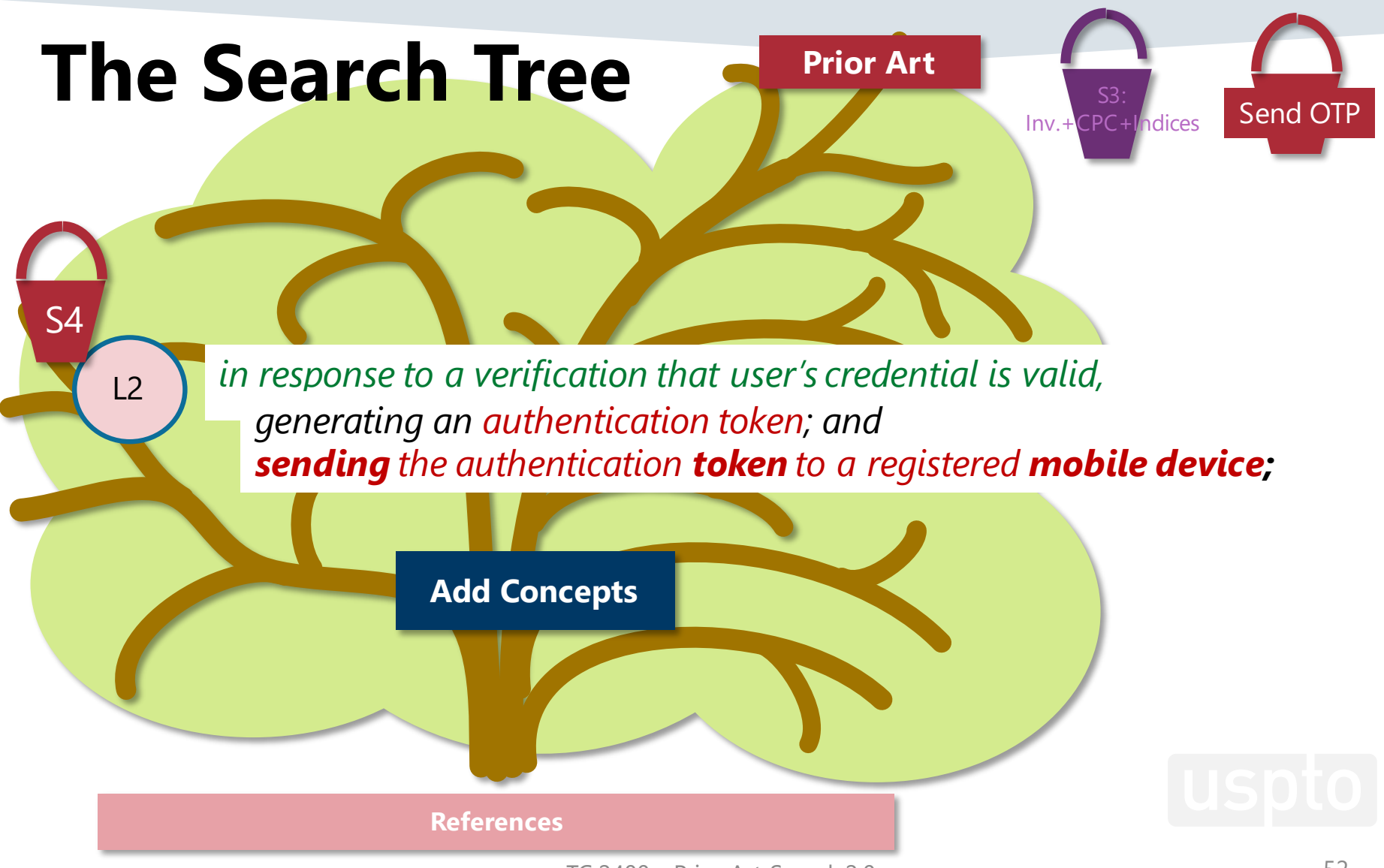
This reference fails disclose

Assessment: - No discussion of Token/OTP

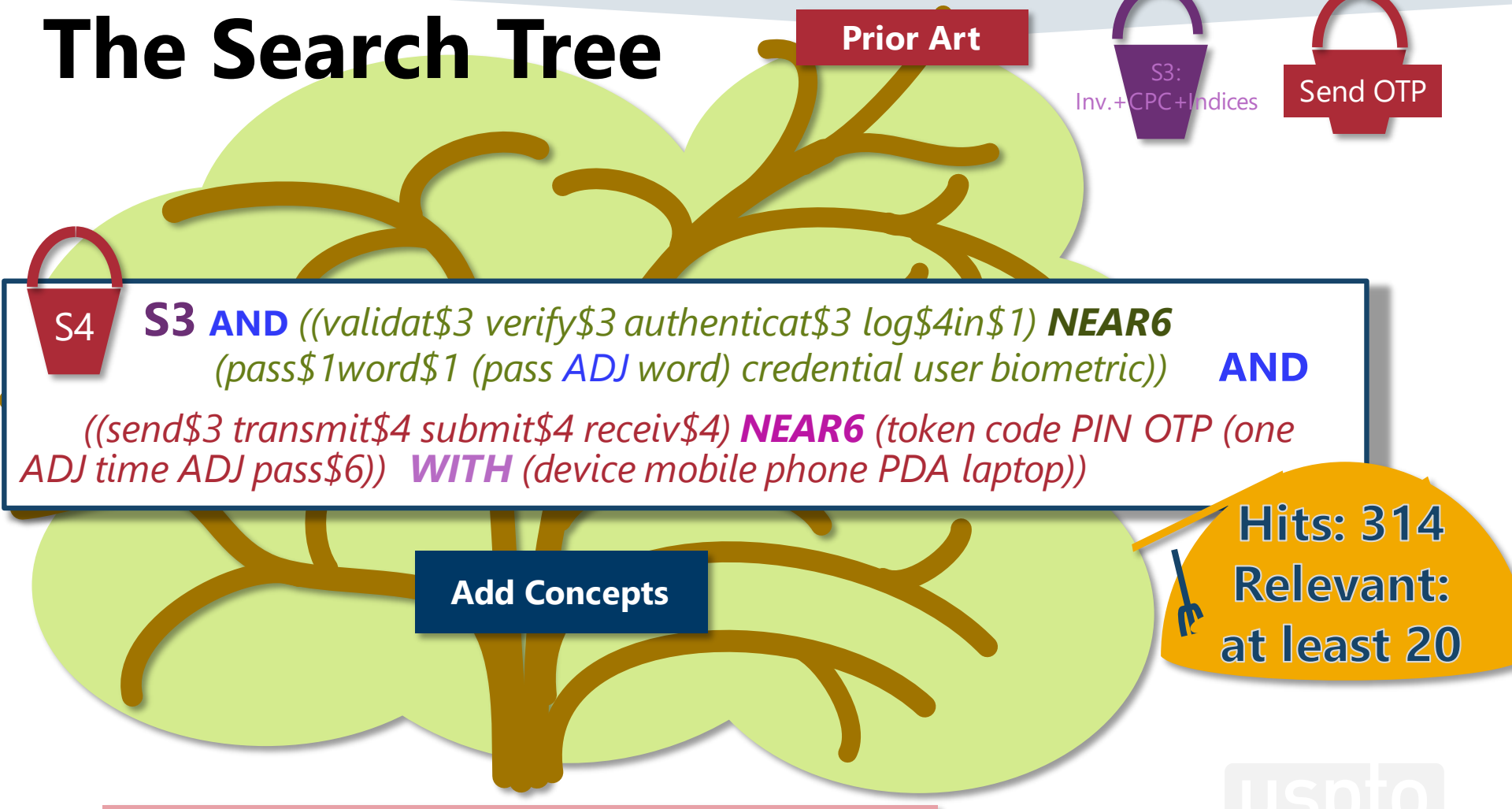
Plan: - Add limitation L3 to include Token/OTP

...e
... is
entirely outside the user device and ***there is no discussion of Token/OTP!***

The Search Tree



The Search Tree



Conduct Search – Text Search

Evaluate Search - Quick Look at References

(10) **Pub. No.: US 2013/0347129 A1**
(43) **Pub. Date: Dec. 26, 2013**

[0066] Beginning at block 356, a registration screen is displayed to a user at login. In some embodiments, the following logic may be invoked only upon receipt of proper login name and password and verification that the previously deposited cookie is present on the user's machine in accordance with above principles.

[0074] FIG. 13 shows how a one-time pass code can be delivered to a user by means of IVR. In summary, the IVR feature may place an outbound call and transmit a spoken one-time pass code to a wireless or land line phone that has been pre-registered by the end user. The

Conduct Search – Text Search

Evaluate Search - Quick Look at References

(10) **Pub. No.: US 2013/0347129 A1**
(43) **Pub. Date: Dec. 26, 2013**

[0066] Beginning at block 356, a registration screen is displayed following login name previously machine in

[0074] be deliver IVR feature may place an outbound call and transmit a spoken one-time pass code to a wireless or land line phone that has been pre-registered by the end user. The

Assessment: - Two steps *"verifying login name-password"* and *"transmitting one-time pass code"* are not in context.

Plan: - Replace operator *"AND"* by *"SAME"*

The Search Tree

Prior Art

S3: Inv.+CPC+Indices

Send OTP

Ver. OTP

S6

S5 AND *((match$3 verify$3 validat$3)* ***NEAR6*** *(token code PIN OTP (one ADJ time ADJ pass$6))* ***WITH*** *(authenticat$3 authoriz$5 grant$3)*

Add Concepts

Hits: 101
Relevant: 18

S5

S3 AND *((validat$3 verify$3 authenticat$3 log$4in$1)* ***NEAR6*** *(pass$1word$1 (pass ADJ word) credential user biometric))* **SAME**

((send$3 transmit$4 submit$4 receiv$4) ***NEAR6*** *(token code PIN OTP (one ADJ time ADJ pass$6))* ***WITH*** *(device mobile phone PDA laptop))*

Change Operator

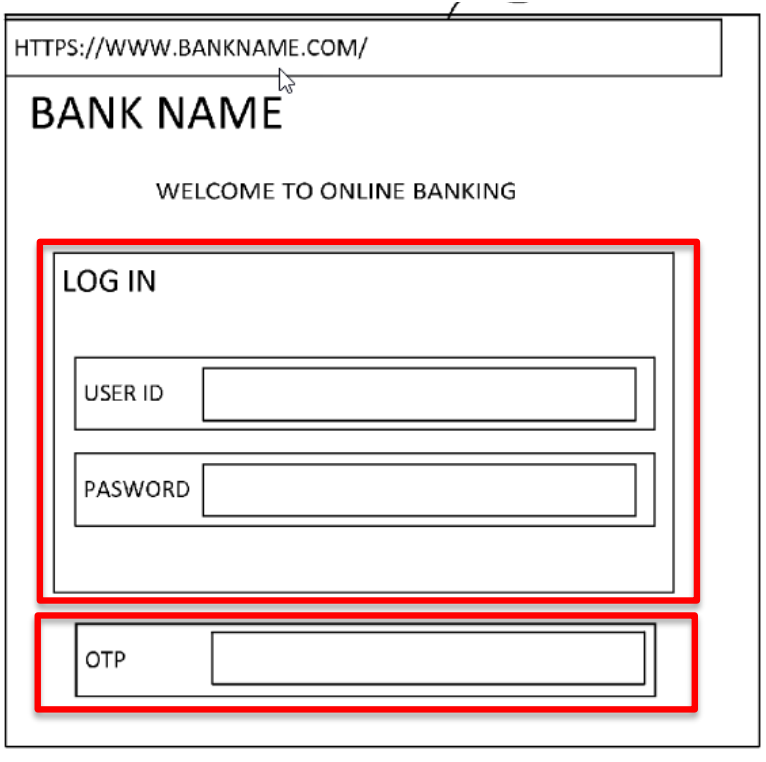
Hits: 223
Relevant:
at least 18

References

Conduct Search – Text Search

Review References – Evaluate Search

Pub. No.: US 2014/0337957 A1
Pub. Date: Nov. 13, 2014



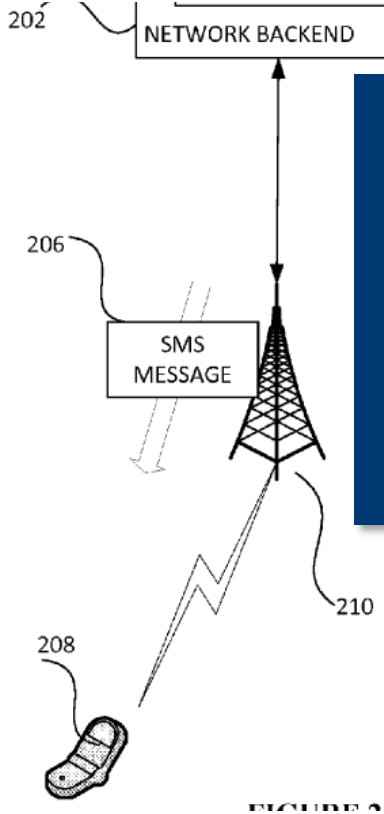


FIGURE 2

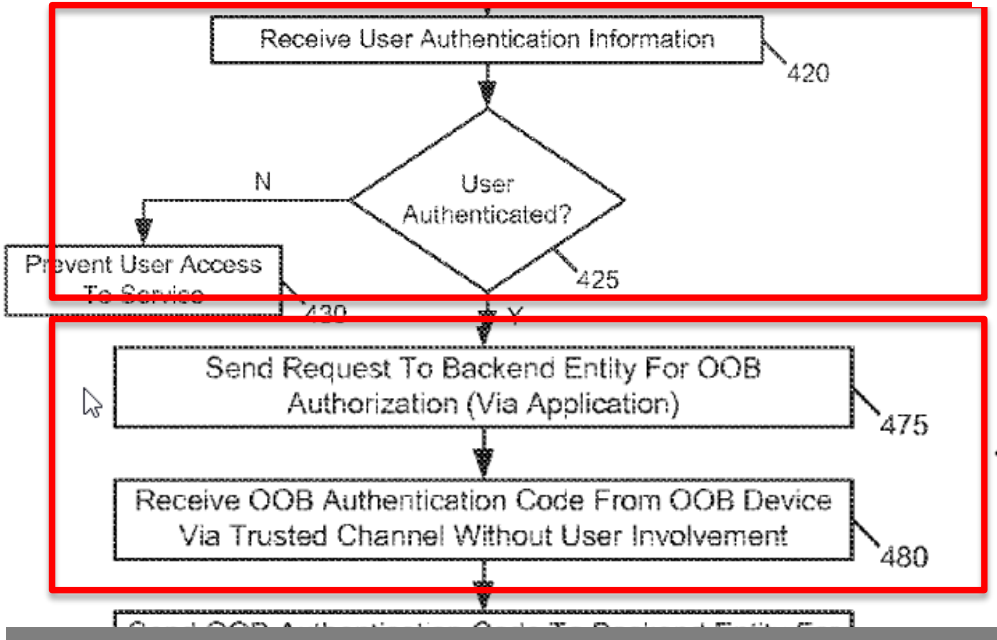
Assessment:

This reference fails disclose claimed limitations as user's credential and OTP are submitted at the same time

Conduct Search – Text Search

Review and Tag References

Pub. No.: US 2016/0286393 A1
Pub. Date: Sep. 29, 2016



The reference reads on the current claim;

However, it does not encompass inventive concept as the OTP is received at and sent from the OOB device (i.e., registered device)

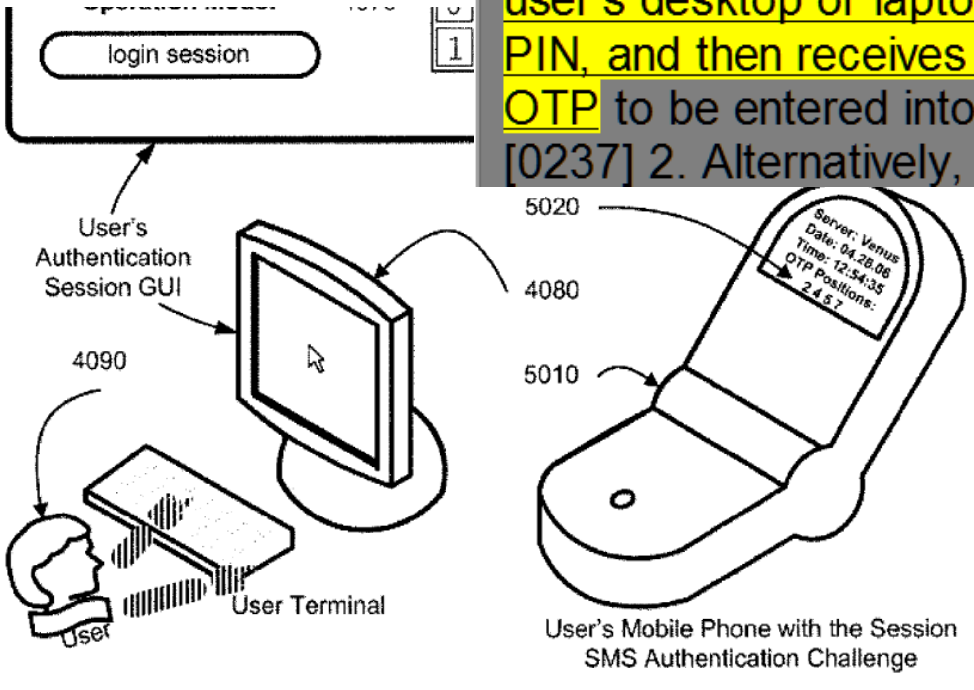
[0056] This process begins at block 475, where a request is sent to a backend entity for an OOB authorization. In an embodiment, this request may be sent via the application. Next at block 480 the client system receives an OOB authentication code from the associated mobile device (referred to herein as an OOB device, as this device and communications between the client system and this device are separate from and thus out-of-band to communications between the client system and the backend entity).

Conduct Search – Text Search

Review and Tag References

Pub. No.: US 2008/0098464 A1
Pub. Date: Apr. 24, 2008

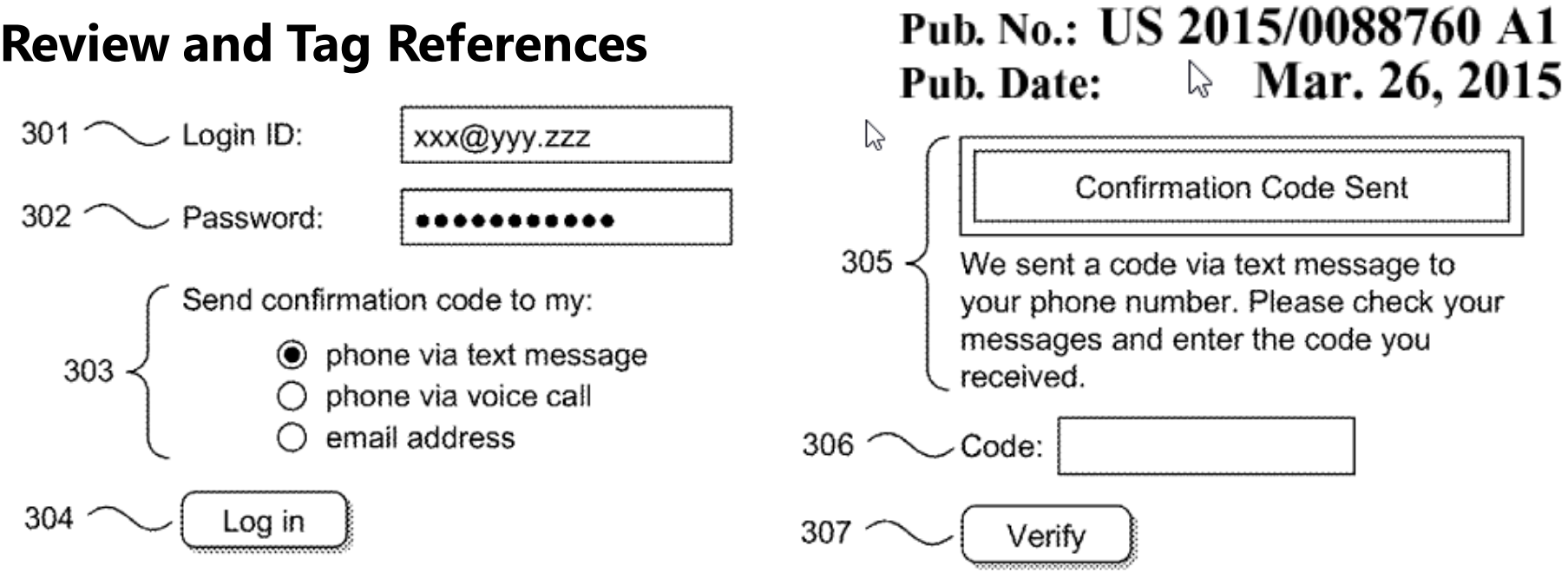
architectures: [0236] 1. The user enters into a browser or a user's desktop or laptop login screen the User Name and the PIN, and then receives a SMS message from the server with OTP to be entered into the same browser or login screen [0237] 2. Alternatively, the user enters the User Name into a



This appears to be an anticipatory reference!

Conduct Search – Text Search

Review and Tag References

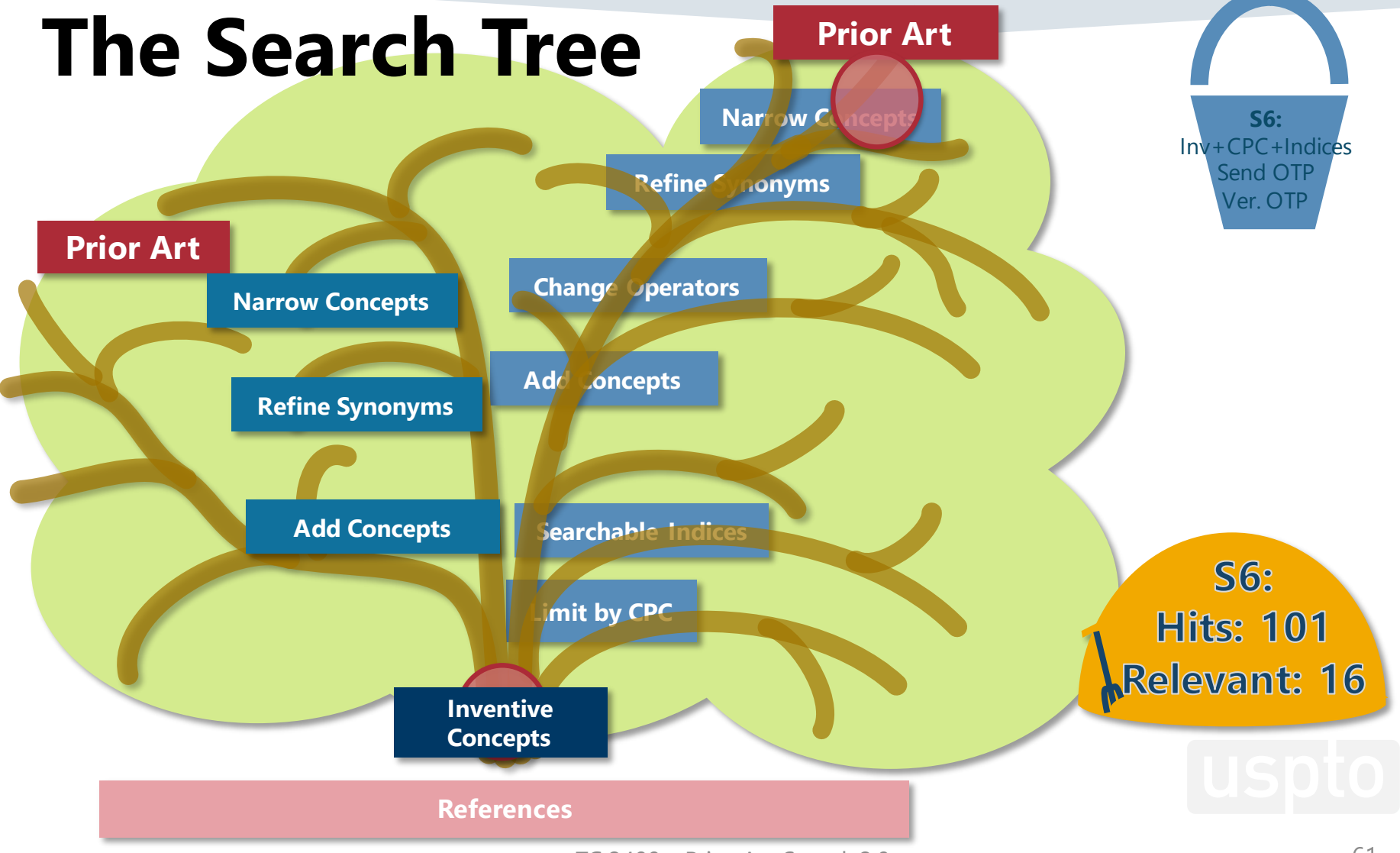


This appears to be another anticipatory reference!

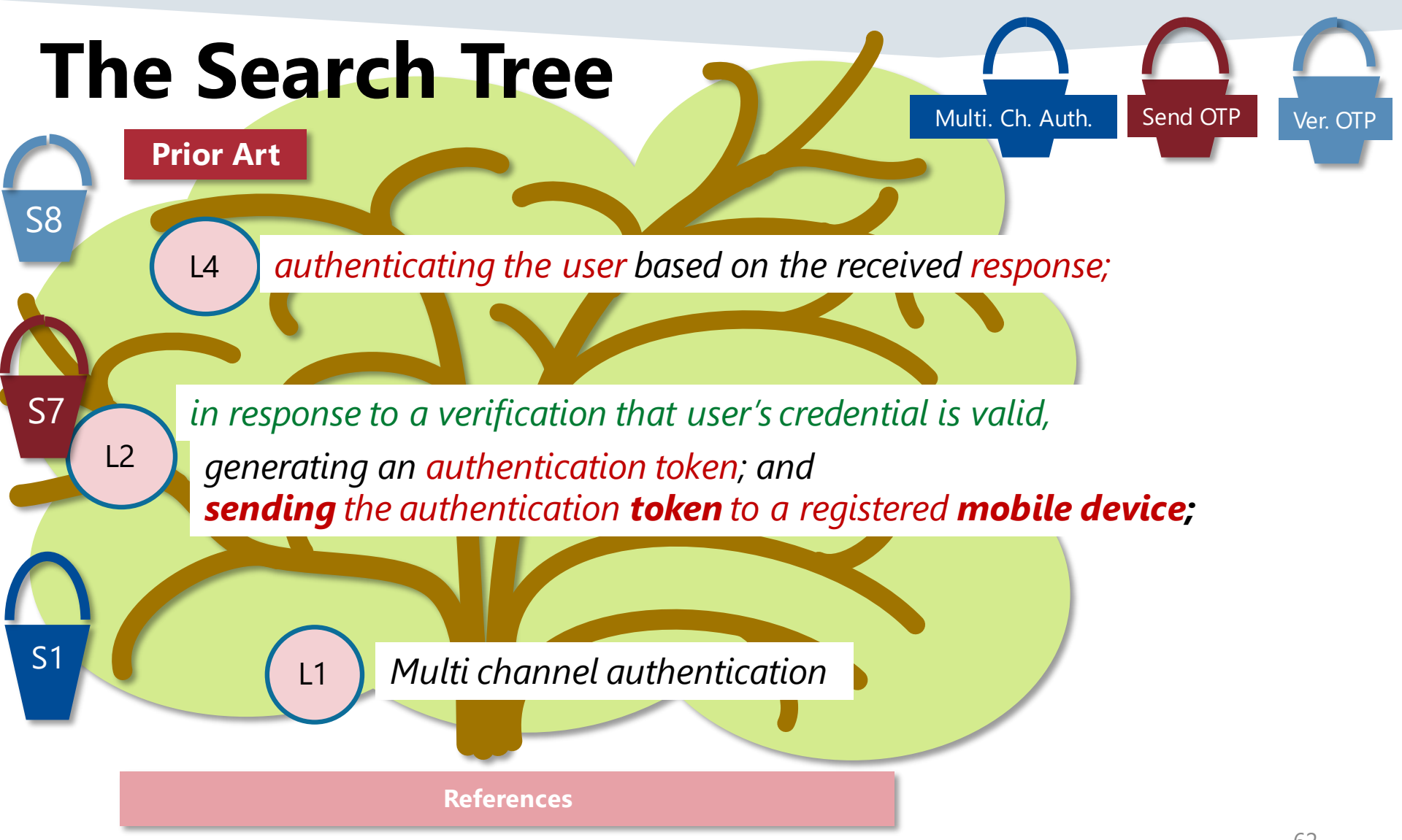
SHOULD WE STOP SEARCHING? ⇨ **NO**

SHOULD CONDUCT A COMPLETE AND THOROUGH SEARCH

The Search Tree



The Search Tree



The Search Tree

Prior Art

S8 **S7 AND** *((match$3 verify$3 validat$3)* ***NEAR6*** *(token code PIN OTP (one time ADJ pass$6))* ***WITH*** *(authenticat$3 authoriz$5 grant$3)*

Hits: 273
Relevant:
At least 29

S7 **S1 AND** *((validat$3 verify$3 authenticat$3 log$4in$1)* ***NEAR6*** *(pass$1word$1 (pass ADJ word) credential user biometric))* **SAME** *((send$3 transmit$4 submit$4 receiv$4)* ***NEAR6*** *(token code PIN OTP ADJ time ADJ pass$6))* ***WITH*** *(device mobile phone PDA laptop))*

Hits: 531
Relevant:
at least 29

S1 *(((multi$4 ADJ channel)(two ADJ channel)(second ADJ channel)(out$1of$1 (out ADJ4 band)(OOB$1))* ***NEAR6*** *(authenticat$4 authoriz$5 log$4in$*

Hits: 3934
Relevant:
at least 34

References

Conduct Search – Text Search

Review and Tag References

Pub. No.: US 2011/0302641 A1
Pub. Date: Dec. 8, 2011

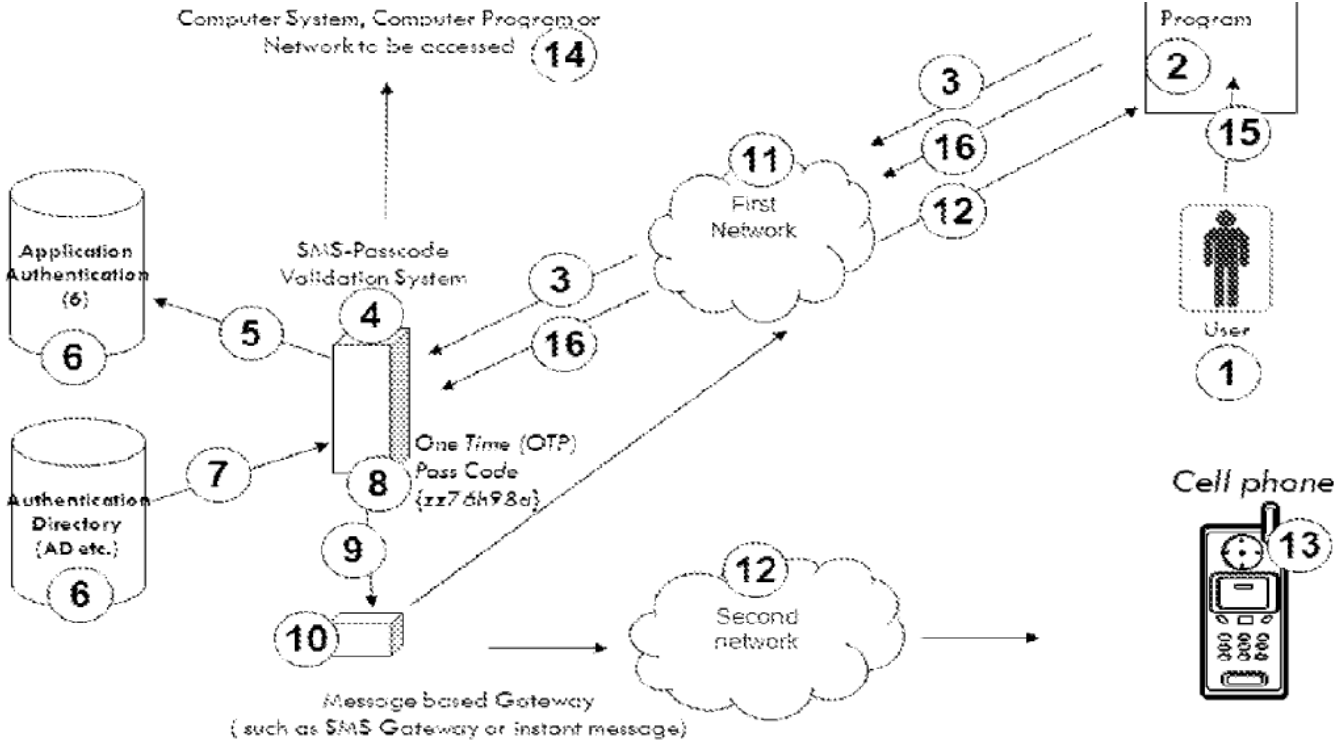
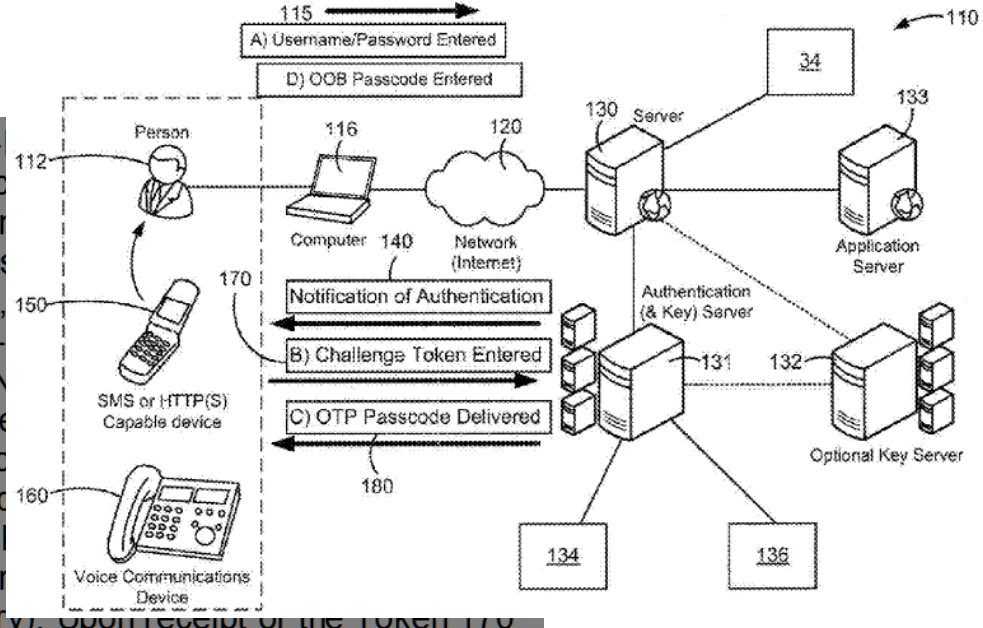


Fig. 1

Conduct Search – Text Search

Review and Tag References

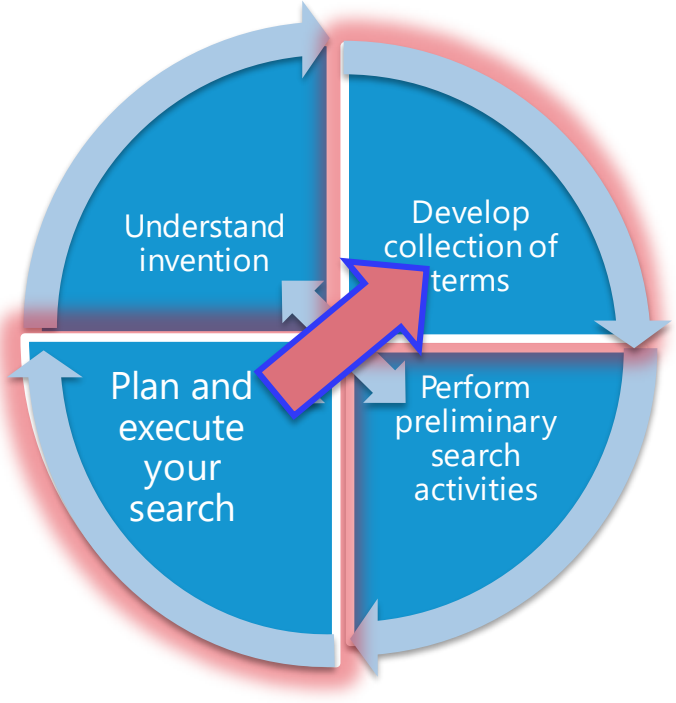
Pub. No.: US 2009/0259848 A1
Pub. Date: Oct. 15, 2009



[0023] The first embodiment contemplates a Server-possession process, as is further shown in FIG. 2. Acc Authentication Server 131 sends an out-of-band Auther (ANM) 140 via short message service (SMS) or other s SMS capable device 150 (such as a cell phone, pager, radio) or interactive voice response (IVR) call to a pre- as a cell phone, home phone, or office phone). This AN transaction is being conducted and prompts him to ente Token 170 (different from the password entered previc phrase), confirming that he has possession of the devic knowledge token is returned to the Authentication and I using the same channel from which the prompt to enter voice response, dual-tone multi frequency (DTMF) entry). Upon receipt of the Token 170 by the Authentication & Key Server 131, if properly validated, a one-time-passcode (OTP) 180 is distributed by the Authentication and Key Server 131 to the user via the pre-registered device (150 or 160) that was just previously validated in their possession. This OTP is then entered by the User to complete the transaction.

Conduct Search

Monitor and Adjust Search



Identify Other Terminologies from Relevant References

Modify Search using the Identified Terminologies

Continue monitoring and adjusting search

Conduct Search – Monitor and Adjust Search

Identify Other Synonyms/Terminologies recited in Relevant Art

Pub. No.: US 2013/0225128 A1
Pub. Date: Aug. 29, 2013

[0008] FIG. 6 illustrates a somewhat improved authentication approach that uses out-of-band communication, known as server-generated one-time password (OTP) authentication. Again, user 520 requests some action to be taken using interface 611 on

[0125] One way to reduce the problems inherent in performing voice biometrics on mobile devices (or in conjunction with the use of mobile devices) is to eliminate the inaccuracy that may occur during cross-channel authentication attempts (because of the problem cited above wherein the channel acoustic characteristics from the channel that allows mobile device-based voice re

Another synonym for Multi-Channel Authentication

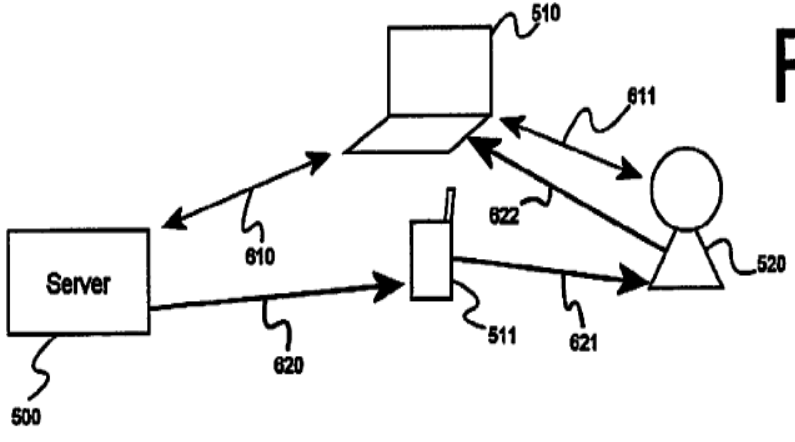


Fig.6

Conduct Search – Monitor and Adjust Search

Identify Other Synonyms/Terminologies recited in Relevant Art

Pub. No.: US 2013/0225128 A1
Pub. Date: Aug. 29, 2013

[0008] FIG. 6 illustrates a somewhat improved authentication approach that uses out-of-band communication, known as server-generated one-time password (OTP) authentication. Again, user 520 requests some action to be taken using interface 611 on

[0125] One way to reduce the problems inherent in performing voice biometrics on mobile devices (or in conjunction with the use of mobile devices) is to eliminate the inaccuracy that may occur during cross-channel authentication attempts (because of the problem cited above wherein [illegible] channel

Assessment: - Found another synonym for *'multi-channel authentication'*

Plan: - Update search using newly found synonym

500

Conduct Search – Monitor and Adjust Search

Update Search On New Synonyms/Terminologies

Conduct search on newly found synonyms

S31	64	(cross$1channel (cross$3 ADJ channel))]NEAR5 (authenticat$3 authoriz$5)	US-PGPUB; USPAT; EPO;	OR	ON

Review and Tag References!

Conduct Search – Monitor and Adjust Search

Conduct Search On Newly Found Synonyms

(19) **United States**

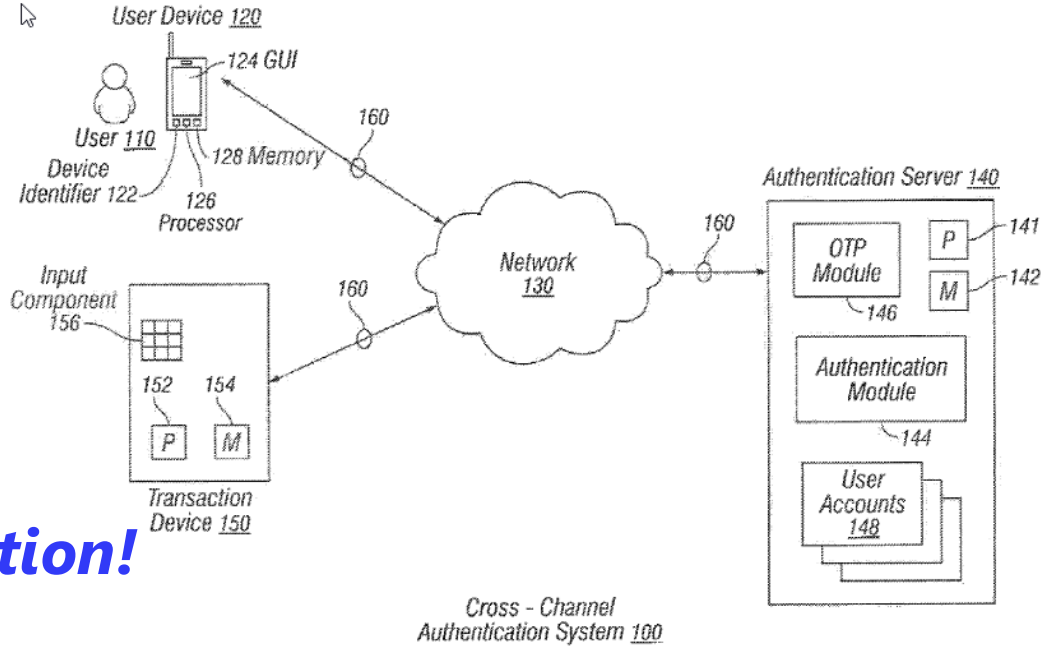
(12) **Patent Application Publication**

Gill et al.

(10) **Pub. No.: US 2015/0215310 A1**

(43) **Pub. Date: Jul. 30, 2015**

(54) **SYSTEM AND METHOD FOR CROSS-CHANNEL AUTHENTICATION**



Another good art for a rejection!

Monitor/Adjust Search – Tips and Hints

Reduce # of Hits (Narrow Search)

Narrow concepts/queries by:

- *Adding more terms into a phrase/sentence using "NEAR" and/or "WITH"*
- *Using less synonyms*
- *Adjusting proximity of the operator and/or wildcards*
  - *Ex. "AND" → "SAME"/"WITH"; "WITH" → "NEAR"; "NEAR6" → "NEAR3"*

Combining more concepts/limitations/phrases/sentences by:

- *Concatenating more limitations/phrases/sentences using "AND"*

Increase # of Hits (Broad Search)

Broaden concepts/queries by:

- *Removing search terms from search strings (i.e., phrases/sentences)*
- *Using more synonyms*
- *Increasing proximity of the operators and/or wildcards*
  - *Ex. "WITH" → "SAME"; "NEAR" → "WITH"; "NEAR3" → "NEAR7"*

Combining less concepts/limitations/phrases/sentences

Conduct Search – Monitor/Adjust Search

Check if any terminologies are not included in search terms

During reviewing relevant references, verify if any terminologies are NOT included in current search strings

Adjust search strings accordingly

Forward/Backward Recitation Search

Perform "Forward/Backward Recitation Search" on relevant references using ***.URPN.*** *search*

Exhausting Search

Think how to properly split limitations and combine references *(i.e., do103 rejection instead of 102)*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DEPARTMENT OF COMMERCE