Examples of opposition/validity/novelty search case studies

(based on the mock exams)

Qualified Patent Information Professional

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Please note: it is to be understood that the sample answers provided in this document are intended to serve as a guide and by no means represent definitive answers. It is entirely possible that additional answers not specifically disclosed in this document could be considered as satisfactory answers.

The general advice for all candidates

This paper is a test of the candidates search skills so most marks will be awarded for the planning of and actual carrying out of the search with only limited emphasis on the final selection of relevant documents.

In order to demonstrate detailed knowledge of search processes candidates are expected to:

- Discuss their understanding of the actual request (including any points that in a real situation might have needed further clarification);
- Plan out suitable search strategies - explaining which concepts should be searched on in which sources and any additional tools that might be useful;
- Conduct a (number of) suitable "online" searching - discussing in detail the reason for selecting specific "terms" and search logic;
- Knowledge of unused search techniques can also be demonstrated by discussing why these are not appropriate for a specific search request;
- Select potentially interesting documents from a list of results
- Demonstrate knowledge of structure of patents and coding systems.

Case study 1

Consider that EP 1278810 (Perfumed adhesive composition, in particular for use as wallpaper paste) has just been granted. An attorney has asked for your help to identify suitable prior art to prepare an opposition statement against the broadest claim of this patent.
You may limit your search to patent databases.

Case study 2

Please try to find prior art to possibly invalidate claim 1 of EP 784139 B1 (Vehicular communication system).
You may limit your search to patent databases.

Sample answers are provided on the next pages

Case study 1 – Sample answer

Consider that EP 1278810 (Perfumed adhesive composition, in particular for use as wallpaper paste) has just been granted. An attorney has asked for your help to identify suitable prior art to prepare an opposition statement against the broadest claim of this patent.

Introduction

The following text suggests one way of answering Case study 1. This is not the perfect answer. Rather this is one way that a searcher with no real experience of this technical area might carry out this search. Any known prior art (e.g. from the opposition part of the EPO file wrapper) has not been considered in this case. However, use of personal experience in searching and knowledge of chemistry nomenclature as well as search expertise have been capitalized on. This answer combines the 3 elements that a good candidate should have demonstrated – planning and understanding the search, search techniques and detailed explanations of all the thinking behind every part of the search.

General Preparation

My first step for any opposition or validity request is to look at the specification of the document of **General Preparation**

My first step for any opposition or validity request is to look at the specification of the document of concern.

In this case we have a granted European patent with a priority date of 2nd May 2000, a filing date of 2nd May 2001 and a grant date of 10th March 2004.

This means that any opposition would have to been raised at the EPO by 10th December 2004. Ideally, I should have scheduled the required searching by mid-October to give my attorney time to prepare the grounds before the nine month deadline for filing oppositions has expired.

In the absence of further direction from my attorney I would check for any independent claims – in this case there are 2 such claims:

Claim 1 is for a composition

Claim 5 is a use claim.

Claim 1 has 5 separate features:

- Adhesive composition
- Odour substance
- Carrier
- Dry form
- Odour only released on contact with water

Although it is likely that not all these features will be searched – especially the water-release process.

Claim 5 has essentially the same features only “contact with water” is replaced by “ready-to-use aqueous composition”.

This means that the same search strategy can probably be used for both independent claims.

I would now discuss with the attorney whether prior art is required against all or part(s) of the claims. I would also want to know how important it is to invalidate the claim(s):

Do we infringe?

Do we plan to use this technology?
Might we want to work in this area?
Do we just think that this patent is not valid and should not be allowed to survive unchallenged?
(The importance of the opposition would affect the time spent on this request if it proves difficult to find useful prior art).
It is also possible that the attorney already has some close prior art and is just looking for further documents to support an inventive step argument.

There are various grounds for an opposition but the two of relevance for any search are Novelty and Inventive Step. However, if on reading the claims (and full disclosure) it is not clear to me what exactly the claims are covering I would always discuss with the attorney. Similarly if I do not believe that a claim is entitled to any priority date or the filing date I would also discuss this with the attorney {see later}. If there are fundamental problems with the (relevant) claim(s) as granted it is even possible that the initially agreed search is not required.

Novelty
For a European patent a novelty destroying document must either be:

- A publication available before the entitled priority date anywhere in the world; or
- Have an earlier priority date and filed in the EP states* but which publish after the priority date.

(* co-pending EP applications that don't designate all the same states as the patent for opposition and also applications in a specific EP country cannot be Novelty hits in undesignated states).

Inventive Step
For a European patent inventive step destroying documents must have been publically available anywhere in the world before the entitled priority date. Inventive step arguments are the result of the combination of 2 or more known disclosures provided that it would be obvious to the skilled person to make this combination. These features may be found in a single or several relevant documents/items.

Priority Date(s)
I have referred to the entitled priority date several times in this discussion. During the priority year of an invention the patentee may make changes to the specification which may result in further priority documents and/or a modified application document (at the filing date). If this happens a claim is only entitled a priority date when it first is fully disclosed – which can be up to 12 months after the 1st priority date.
Before I start an opposition/validity search I will always check the EPO file wrapper to see if I can determine the correct priority date for a claim. If I feel unable to confirm the correct date I will always assume that the patent is only entitled to its filing date since this gives (up to) 12 months more of searchable material. (It is better to include this later material in a search and then decide it is too late than to stop searching at the 1st priority date and to discover that the entitled priority date is actually 12 months later).

File Wrapper
In addition to checking the "priority date" I will also look through the file wrapper to:

- Identify documents discussed in the prosecution

- as possible starting points for searches/search terms
- as part of any citation search
- these provide further arguments not considered by the examiner

- Identify other potential searches if
  - the actual invention is discussed in greater/any detail
  - the inventive step over a specific document is discussed (or demonstrated by experiment)

In this case as I do not have time for a full analysis of the file wrapper I will assume that the only priority date EP 1278810 is its filing date of 02/05/2001. I will also look for any prior art that covers the full breadth of the claims covering both the broad terms and the specific materials.

Initial Preparation

This is an area I am not familiar with so I must start by reading the granted patent to confirm my selection of concepts describing the invention and to identify terms used to describe these concepts.

I have arranged this as a 4 column table – ignoring the addition of water for now:

Adhesive	Odour substance	Carrier	Dry form
Starch (derivatives) Potato starch Cellulose (derivatives) Carboxymethylcellulose methylcellulose Polyvinyl acetate PVA Solvitose Perfactamyl Vinnapas Walocel Gabrosa Tylose Wallpaper paste Glue (paper) size	Odorous Citral (pine, vanilla, lemon, citrus)	Cyclodextrin (derivatives) CAVAMAX CAVASOL	Powder granules

This list includes a number of trade names which might include materials not relevant to this search – before using these in a search it would be necessary to check the suppliers websites for further information (e.g. to identify specific relevant materials).

In the absence of these checks I have decided not to include these trade names in an initial search.

Relevant cited publications
JP 01/225644 (in disclosure) + GB 2093856 and GB 2292082 (in Examination)

I am concerned about the inclusion of the "dry form" concept in any search as this concept might not be specifically described in an abstract and/or claims (it being obvious when reading the full copy that this is a dry composition). Also terms such as dry/powder/granule might give false hits where a dry material is pre-mixed in a solution/gel/paste etc.
This means that I expect to initially concentrate my searches on the remaining three concepts.

I next look up the PatBase entry for EP 1278810. This family includes an equivalent US application which was abandoned during examination so another source prior art might be the US file wrapper. (If this search was performed after May 2004 the reasons for the US final rejection would hopefully have been available. It is possible (or not) that arguments for rejection in the USA might be useful for the EP case).

I would also use the PatBase family as an entry to checking all the codings used to classify this invention (IPC, ECLA and US national codes are available in this case).
IPC code C09J11/06 = Non-macromolecular organic additives in additives;

C09J101/06 = adhesives based on cellulose ethers

C09J103/02 = adhesives based on starch [see also 103/04 to 103/10 for starch derivatives]

C09J131/04 = adhesives based on vinyl acetate homo- or co-polymers

C09J101 - covers adhesive based on cellulose (derivatives) in general
C09J – covers the non-mechanical aspects of the adhesive process in general
C09J103 - covers adhesive based on starch/amylase/amylopectin (derivatives) in general

In ECLA the same codings as above would be useful – care being made to allow for further divisions of certain codes.

The US codes refer to chemicals independent of use – not sure whether would use these.

None of the 3 patents referenced with EP 1278810 had any additional apparently useful classifications. I also tried a quick and dirty search for perfumed adhesives which also gave no extra codes.

Search 1: pn=ep1278810 (Results 1)

Search 2: pn=(JP1225644 or GB2093856 or GB2292082) (Results 4)

Search 3: (TAC=(adhesiv* and perfume*)) (Results 1308)

Search 4: stac=(adhesiv* and perfume*) (Results 1218)

Search 5: ti=(adhesiv* and perfume*) (Results 22)

Fields:

TAC = terms present in the title and all abstracts and claims in a single family

STAC = terms present in the title or the abstract or the claims of an individual member of a patent family

TI = title and PN= patent number
* is a truncation command in PatBase = any term beginning with this stem

I have still found no Japanese FTerms for adhesives – crude search below

Search 6: ti=(adhesiv*) and prc=jp (Results 36520)

however found:
4J040 = adhesives and adhesive methods
4J040/BA01 to 4J040//BA12 cover cellulose and starch adhesives
4J040/DD02 covers Polyvinyl alcohol
4J040/JA06 to 4J040/JA08 cover solid adhesives

This last set of codes combines two of the proposed origin concepts in the search. Before doing any broader searches I checked whether there were any useful references indexed under these codes {apparently not ☹)

Search 7: ((PRD<20010502) and (JCT=(4J040/JA06 or 4J040/JA07 or 4J040/JA08))) (Results 1094)

Search 8: (((TAC=(cyclodextrin* or (cyclo dextrin*))) and (PRD<20010502)) and (JCT=(4J040/JA06 or 4J040/JA07 or 4J040/JA08))) (Results 2)

Search 9: (((TAC=(perfume* or fragrance* or odour* or odor*)) and (PRD<20010502)) and (JCT=(4J040/JA06 or 4J040/JA07 or 4J040/JA08))) (Results 12)

In these searches I have limited to references with a priority date before the filing date of EP 1278810 (PRD<20010502) with Japanese Fterms. For cyclodextrin I have allowed for this term being split (e.g. cyclo-dextrin). I have also allowed for some obvious synonyms for odorous materials including UK and American English spellings.
It would appear that these FTerms are more commonly used for stick/solid application adhesives rather than the powders of interest to this request.

I also believed that cyclodextrins are well-known as complexing agents for perfumes or odours although this is not discussed in the patent – I might confirm this with my attorney or have a quick check on the Internet. For any material I am not familiar with I find Wikipedia a useful staring point:
http://en.wikipedia.org/wiki/Cyclodextrin
The following reference from google books confirmed that the stabilization of perfume by CD is well known:
http://books.google.co.uk/books?id=Lh63qhMUkhQC&pg=PA323&lpg=PA323&dq=cyclodextrin+and+perfume&source=bl&ots=L-AXlwpJiD&sig=qm-WuUuhMKEi8PrZsIz345Bj9Hg&hl=en&sa=X&ei=GD6tT-78K8is0QWTy9CGCQ&ved=0CFgQ6AEwAA#v=onepage&q=cyclodextrin%20and%20perfume&f=false
"Cyclodextrin Technology" by József Szejtli – 1988
[and there are numerous other examples]

This information about cyclodextrins further reduces the different ways that I might search for relevant prior art:
Possible suggestions:
Combination of all 3 concepts – adhesive + cyclodextrin (CD) + odour
Adhesives containing a perfume (for other carriers instead of CD)
CD plus odour plus specific "adhesive materials"
CD in adhesives

The materials listed in the adhesives concept above have many functions other than as adhesives. These materials are widely found in a large number of consumer goods (including some foods). Since some these consumer goods may also include CD and/or perfumes it is

likely that additional term(s) may need to be included in any search to ensure that most (or at least a significant %) of the retrieved items cover adhesive products.

Next I looked at the Chemical Abstracts record for EP 1278810 – in a real situation I would also display the record from the Derwent WPI file (including any file specific coding – manual coding, Derwent Classes and possibly chemical and polymer coding).

```
L1   ANSWER 1 OF 1  CA  COPYRIGHT 2012 ACS on STN
AN   135:358867  CA <<LOGINID::20120511>>
TI   Perfumed adhesive compositions for particular use as wallpaper paste
IN   Van Dijk, Barend Gerrit
PA   Eurovite Nederland B.V., Neth.
SO   PCT Int. Appl., 14 pp.
     CODEN: PIXXD2
DT   Patent
LA   English
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
     ---------------     ----   --------    --------------------   --------
PI   WO 2001083635        A1    20011108    WO 2001-NL330          20010502
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM,
             HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS,
             LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO,
             RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ,
             VN, YU, ZA, ZW
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
             DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
             BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
     NL 1015087            C2    20011113    NL 2000-1015087        20000502
     CA 2407819            A1    20011108    CA 2001-2407819        20010502
     AU 2001055099         A     20011112    AU 2001-55099          20010502
     EP 1278810            A1    20030129    EP 2001-928241         20010502 <--
     EP 1278810            B1    20040310
     EP 1278810            B2    20070704
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
     AT 261479             T     20040315    AT 2001-928241         20010502
     RU 2268281            C2    20060120    RU 2002-132262         20010502
     US 20030171572        A1    20030911    US 2003-275206         20030211
     HK 1053488            A1    20040716    HK 2003-105462         20030729
PRAI NL 2000-1015087       A     20000502
     WO 2001-NL330         W     20010502
ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT
AB   The compns., in a dry form such as a powder or granule, comprise: an
     adhesive, e.g., starch, cellulose and PVA, an odor-substance-releasing
     constituent which contains at least one odor substance and at least one
     carrier such as cyclodextrin or its derivs.  The adhesive composition is in a
     form suitable for mixing with water by an end user with the formation of a
     ready-to-use aqueous composition
IT   Pastes
        (adhesive pastes; perfumed adhesive compns. for particular use as
        wallpaper paste)
IT   Adhesives
        (pastes; perfumed adhesive compns. for particular use as wallpaper
        paste)
IT   Odor and Odorous substances
        (perfumed adhesive compns. for particular use as wallpaper paste)
IT   Paper
        (wallpaper; perfumed adhesive compns. for particular use as wallpaper
        paste)
IT   4080-31-3, Dowicil 75
     RL: TEM (Technical or engineered material use); USES (Uses)
        (Dowicil 75, preservative; perfumed adhesive compns. for particular use
        as wallpaper paste)
IT   7585-39-9D, ÿb-Cyclodextrin, complex
     RL: TEM (Technical or engineered material use); USES (Uses)
        (odorant carrier; perfumed adhesive compns. for particular use as
        wallpaper paste)
IT   5392-40-5, Citral
     RL: MOA (Modifier or additive use); USES (Uses)
        (odorant; perfumed adhesive compns. for particular use as wallpaper
        paste)
IT   9003-20-7, Poly(vinyl acetate)   9004-67-5, Methylcellulose   9004-67-5D,
     Methylcellulose, carboxy derivs.
```

```
     RL: TEM (Technical or engineered material use); USES (Uses)
        (perfumed adhesive compns. for particular use as wallpaper paste)
IT   9005-25-8, Starch, uses
     RL: TEM (Technical or engineered material use); USES (Uses)
        (potato starch; perfumed adhesive compns. for particular use as
        wallpaper paste)
```

This abstract has given me CAS Registry Numbers for some of the chemicals in my list but not alpha or gamma cyclodextrin or CD derivatives
other celluloses (eg carboxymethylcellulose) or any derivatives.

Searching for Registry Numbers in the STN Registry file can be expensive – especially where one is looking for derivatives of a material. How can I minimize this cost without eliminating potential "hits" from my concepts?
I could either pick specific materials and ignore their derivatives on the basis that the "base" materials will also be indexed/abstracted/claimed; or
for CD even assume that the beta form is sufficient; or
look for every RN including the significant character string (hopefully) describing the group of materials CELLULOSE, STARCH or CYCLODEXTRIN.

In this instance I question the value of doing a substructure search to retrieve compounds that form "part of these chemical groups".

The first time I search a new (more common) compound I will also check the full CA Registry entry to see if this identifies further useful synonyms.

For example:

```
=> s 7585-39-9
L1            1 7585-39-9

=> d cn
L1   ANSWER 1 OF 1  REGISTRY  COPYRIGHT 2012 ACS on STN
CN   b-Cyclodextrin  (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN   2,4,7,9,12,14,17,19,22,24,27,29,32,34-
     Tetradecaoxaoctacyclo[31.2.2.23,6.28,11.213,16.218,21.223,26.228,31]nonate
     tracontane, b-cyclodextrin deriv.
CN   Cycloheptaamylose (7CI)
OTHER NAMES:
CN   b-Cycloamylose
CN   b-Cycloheptaamylose
CN   b-Dextrin
CN   Betadex
CN   BW 7
CN   BW 7 (polysaccharide)
CN   Cavamax W 7
CN   CAVAMAX W7 Pharma
CN   Celdex B 100
CN   Celdex B 100H
CN   Celdex B 100z
CN   Celdex N
CN   Cibatex OC-CLD
CN   Cyclodextrin Beta W 7M1.8
CN   Cycloheptaglucan
CN   Cycloheptaglucosan
CN   Cyclomaltoheptaose
CN   Dextrin, b-cyclo
CN   Dexy Pearl 100
CN   Kleptose
CN   Kleptose B
CN   NSC 269471
CN   NSC 314334
CN   Rhodocap N
CN   Rindex B
CN   Ringdex B
```

```
  CN   Ringdex BL
  CN   Schardinger b-dextrin
  CN   Stereoisomer of 5,10,15,20,25,30,35-heptakis(hydroxymethyl)-
       2,4,7,9,12,14,17,19,22,24,27,29,32,34-
       tetradecaoxaoctacyclo[31.2.2.23,6.28,11.213,16.218,21.223,26.228,31]nonate
       tracontane-36,37,38,39,40,41,42,43,44,45,46,47,48,49-tetradecol
```

It is possible to select all the chemical names for searching later

SEL NAME

```
=> sel name
E1 THROUGH E31 ASSIGNED

=> file Ca
....
=> s e30-e31
           310 "SCHARDINGER"/BI
       1810511 "BETA"/BI
         24691 "DEXTRIN"/BI
            10 "SCHARDINGER .BETA.-DEXTRIN"/BI
                 (("SCHARDINGER"(W)"BETA"(W)"DEXTRIN")/BI)
         10286 "STEREOISOMER"/BI
             0 "OF"/BI
       7620743 "5"/BI
       4617404 "10"/BI
       2038599 "15"/BI
       2774205 "20"/BI
       1752242 "25"/BI
       2263011 "30"/BI
        805596 "35"/BI
          1787 "HEPTAKIS"/BI
         75920 "HYDROXYMETHYL"/BI
      10876077 "2"/BI
       6682527 "4"/BI
       3294713 "7"/BI
       2286475 "9"/BI
       1708324 "12"/BI
       1014250 "14"/BI
        805096 "17"/BI
        559546 "19"/BI
        639628 "22"/BI
       1011452 "24"/BI
        447505 "27"/BI
        359492 "29"/BI
        464522 "32"/BI
        352015 "34"/BI
            22 "TETRADECAOXAOCTACYCLO"/BI
        373427 "31"/BI
      10876077 "2"/BI
      10876077 "2"/BI
        529054 "23"/BI
       4664741 "6"/BI
        546053 "28"/BI
       1093409 "11"/BI
         26388 "213"/BI
        959283 "16"/BI
         27841 "218"/BI
        603986 "21"/BI
         23401 "223"/BI
        460409 "26"/BI
         27528 "228"/BI
        373427 "31"/BI
            27 "NONATETRACONTANE"/BI
        394477 "36"/BI
        436470 "37"/BI
        348290 "38"/BI
        265798 "39"/BI
       1597946 "40"/BI
        282679 "41"/BI
             0 "STEREOISOMER OF 5,10,15,20,25,30,35-HEPTAKIS(HYDROXYMETHYL)-2,4,7,9,
               12,14,17,19,22,24,27,29,32,34-TETRADECAOXAOCTACYCLO(31.2.2.23,6.28,11.
               213,16.218,21.223,26.228,31)NONATETRACONTANE-36,37,38,39,40,41"/BI
                 (("STEREOISOMER"(W)"OF"(W)"5"(W)"10"(W)"15"(W)"20"(W)"25"(W)"3
                 0"(W)"35"(W)"HEPTAKIS"(W)"HYDROXYMETHYL"(W)"2"(W)"4"(W)"7"(W)"
                 9"(W)"12"(W)"14"(W)"17"(W)"19"(W)"22"(W)"24"(W)"27"(W)"29"(W)"
                 32"(W)"34"(W)"TETRADECAOXAOCTACYCLO"(W)"31"(W)"2"(W)"2"(W)"23"
                 (W)"6"(W)"28"(W)"11"(W)"213"(W)"16"(W)"218"(W)"21"(W)"223"(W)"
                 26"(W)"228"(W)"31"(W)"NONATETRACONTANE"(W)"36"(W)"37"(W)"38"(W
```

```
                )"39"(W)"40"(W)"41")/BI)
L2          10 ("SCHARDINGER .BETA.-DEXTRIN"/BI OR "STEREOISOMER OF 5,10,15,20,
               25,30,35-HEPTAKIS(HYDROXYMETHYL)-2,4,7,9,12,14,17,19,22,24,27,29
               ,32,34-TETRADECAOXAOCTACYCLO(31.2.2.23,6.28,11.213,16.218,21.223
               ,26.228,31)NONATETRACONTANE-36,37,38,39,40,41"/BI OR 1187028-35-
               8/BI OR 1269982-56-0/BI OR 37331-89-8/BI OR 449728-55-6/BI)
```

but I prefer to download the Registry entry and select more useful terms from the list.

First Full Search

I have annotated in red my comments into the transcript from search with STN EXPress

```
=> file reg

=> e Cyclodextrin/cn
E1            1     CYCLODEX G-TA/CN
E2            1     CYCLODEXTRAN GLUCANOTRANSFERASE/CN
E3            1 --> CYCLODEXTRIN/CN
E4            2     CYCLODEXTRIN ABC TRANSPORTER, PERMEASE PROTEIN (STREPTOCOCCU
….
```

Expand in the Chemical Name field for compounds beginning with the term cyclodextrin – there are lots but there is a useful code for the "generic name" rather than the beta-form that I already have

```
=> s e3
L3            1 CYCLODEXTRIN/CN

=> file hcaplus
COPYRIGHT (C) 2012 AMERICAN CHEMICAL SOCIETY (ACS)

=> set plurals on
SET COMMAND COMPLETED
```

This command automatically searches for any plural versions of input terms during the current search session.

```
=> s cyclodextrin or cyclo()Dextrin
          51088 CYCLODEXTRIN
          12958 CYCLODEXTRINS
          52372 CYCLODEXTRIN
                  (CYCLODEXTRIN OR CYCLODEXTRINS)
          32894 CYCLO
              8 CYCLOS
          32901 CYCLO
                  (CYCLO OR CYCLOS)
          25674 DEXTRIN
           3736 DEXTRINS
          27496 DEXTRIN
                  (DEXTRIN OR DEXTRINS)
             36 CYCLO(W)DEXTRIN
L4        52373 CYCLODEXTRIN OR CYCLO(W)DEXTRIN
```

This searches for CD as both one word or as 2 terms adjacent in the specified order.
As I have not specified a field for this search I am looking in the Basic Index for this database.
The Basic index in the Chemical Abstracts database includes the TI, AB, ST and IT fields.

```
=> s Cycloheptaamylose or Cycloamylose or beta()dextrin or Betadex or BW()7
            211 CYCLOHEPTAAMYLOSE
              5 CYCLOHEPTAAMYLOSES
            211 CYCLOHEPTAAMYLOSE
                  (CYCLOHEPTAAMYLOSE OR CYCLOHEPTAAMYLOSES)
            204 CYCLOAMYLOSE
             88 CYCLOAMYLOSES
            240 CYCLOAMYLOSE
                  (CYCLOAMYLOSE OR CYCLOAMYLOSES)
        1870353 BETA
            277 BETAS
        1870436 BETA
                  (BETA OR BETAS)
          25674 DEXTRIN
           3736 DEXTRINS
          27496 DEXTRIN
                  (DEXTRIN OR DEXTRINS)
```

```
           252 BETA(W)DEXTRIN
            30 BETADEX
         16018 BW
           394 BWS
         16371 BW
                 (BW OR BWS)
       3510383 7
            33 BW(W)7
L5          710 CYCLOHEPTAAMYLOSE OR CYCLOAMYLOSE OR BETA(W)DEXTRIN OR BETADEX OR BW(W)7

=> s Cycloheptaglucan or Cycloheptaglucosan or Cyclomaltoheptaose or Kleptose
            15 CYCLOHEPTAGLUCAN
             2 CYCLOHEPTAGLUCOSAN
           294 CYCLOMALTOHEPTAOSE
            21 CYCLOMALTOHEPTAOSES
           300 CYCLOMALTOHEPTAOSE
                 (CYCLOMALTOHEPTAOSE OR CYCLOMALTOHEPTAOSES)
            60 KLEPTOSE
L6          377 CYCLOHEPTAGLUCAN OR CYCLOHEPTAGLUCOSAN OR CYCLOMALTOHEPTAOSE OR KLEPTOSE
```

Sets 5 and 6 search for identified synonyms for CD taken from the Registry file entry for the β-cyclodextrin

```
=> s ?cyclodextrin or ?cyclo()Dextrin
         51161 ?CYCLODEXTRIN
        126768 ?CYCLO
         25674 DEXTRIN
          3736 DEXTRINS
         27496 DEXTRIN
                 (DEXTRIN OR DEXTRINS)
            36 ?CYCLO(W)DEXTRIN
L7       51172 ?CYCLODEXTRIN OR ?CYCLO(W)DEXTRIN
```

? is a truncation symbol allowing for null to any number of extra characters. In this instance it has been used before a term meaning that I have requested LEFT–HAND truncation (any term ending with the CD suffix).

Notice that the automatic plurals has been "ignored" for this set so I would need extra search terms for ?cyclodextrins.

```
=> s l1 or l3
         24955 L1
          9574 L3
L8       32446 L1 OR L3
```

This command searches for the CAS Registry numbers – I have decided (at first ?) to not include the RNs for any other cyclodextrins.

```
=> s perfume or fragrance or odour or odor
         26740 PERFUME
         29064 PERFUMES
         44964 PERFUME
                 (PERFUME OR PERFUMES)
         18473 FRAGRANCE
          4477 FRAGRANCES
         20719 FRAGRANCE
                 (FRAGRANCE OR FRAGRANCES)
          3234 ODOUR
           357 ODOURS
          3550 ODOUR
                 (ODOUR OR ODOURS)
         97606 ODOR
         15150 ODORS
        103760 ODOR
                 (ODOR OR ODORS)
L9      155468 PERFUME OR FRAGRANCE OR ODOUR OR ODOR
```

Alternative synonyms for odour including UK and American spelling of odour

```
=> s odor? or l9
      124980 ODOR?
L10   175873 ODOR? OR L9
```

"Full" odour concept including any truncated terms being with the prefix ODOR.

```
=> s adhesive or glue
```

```
        295056 ADHESIVE
        181558 ADHESIVES
        335513 ADHESIVE
                  (ADHESIVE OR ADHESIVES)
         27150 GLUE
          8944 GLUES
         32232 GLUE
                  (GLUE OR GLUES)
L11     359840 ADHESIVE OR GLUE
```

Broad adhesive terms

```
=> s wallpaper or wall()paper
          3791 WALLPAPER
           354 WALLPAPERS
          3888 WALLPAPER
                  (WALLPAPER OR WALLPAPERS)
        466453 WALL
        187160 WALLS
        584194 WALL
                  (WALL OR WALLS)
       1204224 PAPER
         66973 PAPERS
       1244197 PAPER
                  (PAPER OR PAPERS)
           908 WALL(W)PAPER
L12       4399 WALLPAPER OR WALL(W)PAPER

=> s paste
        130950 PASTE
         45800 PASTES
L13     148191 PASTE
                  (PASTE OR PASTES)

=> s l12()l13
L14         67 L12(W)L13
```

This allows for wallpaper or wall paper next to paste in that order

```
=> s l12(a)l13
L15         81 L12(A)L13
```

This allows for wallpaper or wall paper next to paste in any order

```
=> s l15 not l14
L16         14 L15 NOT L14

=> d hitind
```

This display command shows all the applied Patent Classifications plus CA Sections and any IT (Index term) phrases in which a searched for term was retrieved.

```
L16  ANSWER 1 OF 14  HCAPLUS  COPYRIGHT 2012 ACS on STN
IPCI C09D0133-02 [I,A]; C09D0005-28 [I,A]
IPCR C09D0133-02 [I,A]; C09D0005-28 [I,A]
CC   43-7 (Cellulose, Lignin, Paper, and Other Wood Products)
     Section cross-reference(s): 42
IT   Emulsions
        (acrylic; manufacture of environmentally friendly liquid texture paste
        /wallpaper, and its components)
.
.
.
IT   Abrasion-resistant materials
     Antibacterial agents
     Antifoaming agents
     Antifreeze
     Pastes
     Preservatives
     Water-resistant materials
        (manufacture of environmentally friendly liquid texture paste/
        wallpaper, and its components)

=> e c09j/ipc
E#   FREQUENCY    AT     TERM
--   ---------    --     ----
E1           1           C09H0031-16/IPC
E2           7           C09I/IPC
E3       91535    88 --> C09J/IPC
E4           2           C09J0000/IPC
```

```
E5            2           C09J0000-00/IPC
E6         1656           C09J0001/IPC
E7            1           C09J0001-/IPC
E8         1340   103     C09J0001-00/IPC
E9          486     2     C09J0001-02/IPC
E10           1           C09J0001-04/IPC
E11           1           C09J0001-106/IPC
E12           2           C09J0002/IPC
```

This is the expand command. I have looked at the broad IPC code for adhesives to check how happy terms this covers

```
=> s c09j/ipc,ecla or 4j040/fterm
         91538 C09J/IPC
         21581 C09J/ECLA
         13440 4J040/FTERM
L17      92785 C09J/IPC,ECLA OR 4J040/FTERM
```

Based on the fairly low total number of records associated with C09J I have chosen to search for all the adhesive code terms together giving me greater flexibility. Wherever possible I will always try to keep my concepts separate in case they need be re-used.

```
=> d hist
```

Display all the search commands and results for the current search session

```
     FILE 'REGISTRY' ENTERED AT
L1             1 S 7585-39-9
                 SEL NAME

     FILE 'CA' ENTERED AT
L2            10 S E30-E31

     FILE 'REGISTRY' ENTERED AT
                 E CYCLODEXTRIN/CN
L3             1 S E3

     FILE 'HCAPLUS' ENTERED AT
                 SET PLURALS ON
L4         52381 S CYCLODEXTRIN OR CYCLO()DEXTRIN
L5           710 S CYCLOHEPTAAMYLOSE OR CYCLOAMYLOSE OR BETA()DEXTRIN OR BETADEX
L6           377 S CYCLOHEPTAGLUCAN OR CYCLOHEPTAGLUCOSAN OR CYCLOMALTOHEPTAOSE
L7         51172 S ?CYCLODEXTRIN OR ?CYCLO()DEXTRIN
L8         32446 S L1 OR L3
L9        155468 S PERFUME OR FRAGRANCE OR ODOUR OR ODOR
L10       175873 S ODOR? OR L9
L11       359788 S ADHESIVE OR GLUE
L12         4399 S WALLPAPER OR WALL()PAPER
L13       148191 S PASTE
L14           67 S L12()L13
L15           81 S L12(A)L13
L16           14 S L15 NOT L14
                 E C09J/IPC
L17        92785 S C09J/IPC,ECLA OR 4J040/FTERM

=> s l11 or l15
L18      359882 L11 OR L15
```

Set 18 = all general adhesive terms (not the patent classification results)

```
=> s l4-l8
L19       53080 (L4 OR L5 OR L6 OR L7 OR L8)
```

Set 19 = all the CD concept

```
=> s l10 and l19
L20        1636 L10 AND L19
```

Combine the odour and CD concepts

The AND operator gives the greatest Recall but also losses the ability for any concepts to be more closely related. If the number of hits generated [see L23 below] were too large to view and/or clearly largely irrelevant it would have been possible to combine these 2 concepts using a field or proximity operator to reduce the size and increase the relevance or Precision of this combined set. I deliberately combined the concepts in this order to give me the

flexibility to be able to more closely link the odour and CD concepts rather than increase the association of either of these concepts with the adhesive (product) concept.

```
=> s l20 and l18
L21         55 L20 AND L18

=> s l20 and l17
L22         12 L20 AND L17

=> s l21-l22
L23         57 (L21 OR L22)
```

Combined the odour, CD and adhesive concepts

```
=> s l23 and p/dt
       8238830 P/DT
L24         57 L23 AND P/DT
```

Select those hits that are patents – all the set in this case

```
=> s l23 not pry.b>2001
       3374685 PRY.B>2001
L25         27 L23 NOT PRY.B>2001
```

This should remove those hits which do not have a basic priority date (1st priority date added by CAS) before the end of 2001. PRY = priority year [PRY.B = basic priority year]

```
=> s l25 NOT 20010502-20011231/PRD.B
        185681 20010502-20011231/PRD.B
                  (20010502-20011231/PRD.B)
L26         26 L25 NOT 20010502-20011231/PRD.B
```

This should remove those hits which have a basic priority date between the filing date of EP 1278810 and the end of 2001. PRD = priority date. This field is date range searchable.

```
=> save temp ep1278a/a l26
ANSWER SET L26 HAS BEEN SAVED AS 'EP1278A/A'
```

SAVE TEMP holds this set of results on the STN system for 2 weeks – only accessible to this USERID

```
=> d l26 ti 1-26
```

Display the titles for assessment – I prefer to scan the title list and eliminate those results that are clearly not relevant thus reducing the numbers needing more detailed scrutiny (this is a negative selection and is done with caution – if in doubt leave in the results of interest).

```
L26  ANSWER 1 OF 26  HCAPLUS  COPYRIGHT 2012 ACS on STN
TI   Skin antiaging treatment with botulinum toxin combined with
     peptides-containing compositions

L26  ANSWER 2 OF 26  HCAPLUS  COPYRIGHT 2012 ACS on STN
TI   Highly absorbing fibrous web

L26  ANSWER 3 OF 26  HCAPLUS  COPYRIGHT 2012 ACS on STN
TI   Composition comprising antiviral and antimicrobial agent for treating
     viral infection at smallpox vaccination site

L26  ANSWER 4 OF 26  HCAPLUS  COPYRIGHT 2012 ACS on STN
TI   Health food containing garlic and honey as main ingredients and its
     preparation method

L26  ANSWER 5 OF 26  HCAPLUS  COPYRIGHT 2012 ACS on STN
TI   Perfumed adhesive compositions for particular use as wallpaper paste
```

Answer 5 is EP 1278810

```
L26  ANSWER 6 OF 26  HCAPLUS  COPYRIGHT 2012 ACS on STN
TI   Adhesively applied external nasal strips and dilators containing
     medications and fragrances

L26  ANSWER 7 OF 26  HCAPLUS  COPYRIGHT 2012 ACS on STN
TI   Cyclodextrin containing pressure sensitive adhesives for medical devices

L26  ANSWER 8 OF 26  HCAPLUS  COPYRIGHT 2012 ACS on STN
TI   Transdermal devices comprising essential oils for aromatherapy
```

```
L26  ANSWER 9 OF 26  HCAPLUS  COPYRIGHT 2012 ACS on STN
TI   Curing promotor for cyanoacrylate

L26  ANSWER 10 OF 26  HCAPLUS  COPYRIGHT 2012 ACS on STN
TI   Wrinkle reducing composition for fabrics

L26  ANSWER 11 OF 26  HCAPLUS  COPYRIGHT 2012 ACS on STN
TI   Bad taste- or odor-free packaging materials without migration of low
     molecular weight byproducts of polyethylene

L26  ANSWER 12 OF 26  HCAPLUS  COPYRIGHT 2012 ACS on STN
TI   Cyclodextrin adducts with heterocyclic compounds having at least one
     nitrogen, their preparation and use

L26  ANSWER 13 OF 26  HCAPLUS  COPYRIGHT 2012 ACS on STN
TI   adhesive tapes containing b-cyclodextrin to inhibit transdermal
     absorption of perfume and/or preservative contents

L26  ANSWER 14 OF 26  HCAPLUS  COPYRIGHT 2012 ACS on STN
TI   Deodorant-containing adhesive compositions for information carrier sheets

L26  ANSWER 15 OF 26  HCAPLUS  COPYRIGHT 2012 ACS on STN
TI   Synthetic rubber-containing odorless adhesive compositions

L26  ANSWER 16 OF 26  HCAPLUS  COPYRIGHT 2012 ACS on STN
TI   Synthetic resin articles with cyclodextrin-included guest materials

L26  ANSWER 17 OF 26  HCAPLUS  COPYRIGHT 2012 ACS on STN
TI   Adhesive deodorant tape for the control of underarm odor

L26  ANSWER 18 OF 26  HCAPLUS  COPYRIGHT 2012 ACS on STN
TI   Deodorant adhesive tapes containing cyclodextrins

L26  ANSWER 19 OF 26  HCAPLUS  COPYRIGHT 2012 ACS on STN
TI   Deodorant adhesive tapes containing cyclodextrins for the control of
     underarm odor

L26  ANSWER 20 OF 26  HCAPLUS  COPYRIGHT 2012 ACS on STN
TI   Adsorbent composition, and method of making same

L26  ANSWER 21 OF 26  HCAPLUS  COPYRIGHT 2012 ACS on STN
TI   Deodorant adhesive tapes for the control of underarm odor

L26  ANSWER 22 OF 26  HCAPLUS  COPYRIGHT 2012 ACS on STN
TI   Oral odor-controlling patch compositions

L26  ANSWER 23 OF 26  HCAPLUS  COPYRIGHT 2012 ACS on STN
TI   Persistent fragrant and insect repellent coatings for buildings

L26  ANSWER 24 OF 26  HCAPLUS  COPYRIGHT 2012 ACS on STN
TI   Microcapsule-containing temporary adhesives

L26  ANSWER 25 OF 26  HCAPLUS  COPYRIGHT 2012 ACS on STN
TI   Synthetic resin product containing compound included in cyclodextrin

L26  ANSWER 26 OF 26  HCAPLUS  COPYRIGHT 2012 ACS on STN
TI   Perfuming pressure-sensitive adhesives

=> log hold
```

This command holds this session open without incurring any further connection charges for up to 2 hours.

End of 1st Full Search Session

This set L26 includes some potentially interesting hits. I could view the abstracts online
e.g. D L26 SBIB ABS HITIND
or alternatively I could transfer a view in a full-text database such as PatBase:

? sel pn.b l26 n-m
This command would select the 1st family member (basic patent) of records n-m in set L26
? s e1-e(1+m-n)

This effectively displays all the selected basic patents which can then be cut and pasted into PatBase for viewing

Next Steps

If I have identified potentially useful documents I would discuss these with my attorney – if this enough material I can stop.

Assuming I need more references I would:
1) check the records I have viewed in CAS or PatBase for alternative terms to describe any of my concepts. These terms can be added to any of my concepts which I have separated as sets L17 and L18 (adhesives); set L10 (odorous materials) and set L19 (cyclodextrin). This might give me more records to look at.

Other suitable terms that could be useful are for example:

a) inclusion compounds {found in both Chemical Abstracts results and PatBase}
e.g. PatBase record **Family number: 3075611**

Title: [EN] Process of making a synthetic resin product containing a molecular **inclusion** compound in cyclodextrin

See http://en.wikipedia.org/wiki/Inclusion_compound

b) clathrate {found in PatBase}
see http://en.wikipedia.org/wiki/Clathrate_compound

These terms are both examples of where a compound or its impact has been replaced by terms describing its function.

2) repeat the same basic search in the Derwent World Patent Index database.
This database does not use the CAS Registry Numbers but has its own system for indexing specific chemicals – the Derwent Registry Number (DRN). I would use the EXPAND command in the CN field to get the appropriate numbers for (beta-) cyclodextrin.
The DRN forms a separate part of the DWPI database in STN. These numbers can be searched in the patent family records with the /DCR suffix.

Other search options

Up to now I have looked for relevant material retrieved by combining the 3 concepts:
Adhesives + CD (carriers) + Odorous material

However I have not included in my strategies to date the specific adhesives disclosed in EP 1278810 {see my table of 4 concepts above}. Is it possible to expand my search to include these materials? Well I know from experience that searchers combining for example:
PVA + CD + perfume
will retrieve many documents that are not relevant to this request

For example in PatBase:

Search 10: (TAC=((polyvinyl alcohol) and cyclodextrin* and perfume*)) (Results 32)

Gave the following results

1) **US2009285768A**
Compositions and Methods Incorporating Photocatalysts

2) **US2003104969A**
Laundry system having unitized dosing

3) **US2007259170A**
Films with microcapsules

4) **US2005101501A**
Perfume composition

5) **US2008274149A**
Encapsulation and Controlled Release of Biologically Active Ingredients with Enzymatically Degradable Microparticulate, Hyperbranched Polymers

6) **US2004071757A**
Inhalation antiviral patch

7) **US2002176879A**
SKIN DEODORIZING COMPOSITIONS

8) **US2009053271A**
Reverse-Phase Microcapsules for Actice Ingredients, Simplified Process of Manufacture Thereof and Combined Formulation Wdg- Cs,Zc, Ec-

None of which are relevant.
There is no point in combining the materials with any of the terms already used to describe the adhesive concept – this would only result in a subset of the answers already looked at in set L26.
Instead I will try combining the materials with the 4th concept from my table "Dry form" – this might give me more generic disclosures that may be relevant to adhesives.

<u>Continued search from L26</u>

```
=> file reg
=> s 9005-25-8
L27           1 9005-25-8
```
Registry Number for starch
```
=> file hcaplus
=> s starch   {set L28}
```
For starch or starches
```
=> s powder or granule
=> s dry or dried
```
These 2 sets L29 and L30 together with L13 represent the FORM concept for this search. By having a separate set for PASTE when looking for WALLPAPER PASTE earlier in this search I have the flexibility to combine this set into the form concept without having to re-search for this term.
```
=> s l13 or l29-l30
```
The form concept is now set L31
```
=> s l28(2a)l31    {set L32}
```
"starch" within 3 terms of the form concept
```
=> s l27(l)l31     {set L33}
```
Most Registry Numbers are found as Index Terms in the IT field – although some will be found in the abstract. In the IT field the L proximity operator looks for terms found in the same Index Term and its descriptive phrase – for example
```
IT   9005-25-8D, Starch, pregelatinized
        (compressible, highly viscous polysaccharide and polyol powder)
```
This only associates terms but does not necessarily link them together as a compound concept
```
=> s l27(2w)l31     {set L34}
```
Here using the closer proximity operator 2W makes it much more likely that the 2 concepts are more closely associated – for example
```
IT   9005-25-8, Starch, uses
        (dried food; artificial vomiting object composition containing flavin,
        and use for artificial vomiting object)
```

The nested way that the indexing is constructed in Chemical Abstracts means that the terms at the beginning of the descriptive phrase or at the end of Index Term are associated with the Index Term

```
=> s l32 or l34
```
Combined set L35 for starch + form
```
=> s l35 and l19
```
Starch + form + CD
```
=> s l10 and l36
```
Starch + form + CD + odorous L37
```
=> s l37 and p/dt
=> s l38 not pry.b>2001
=> s l39 NOT 20010502-20011231/PRD.B
=> s l40 not l26
```
This retrieved 3 answers not in first set of results

This same approach was extended to CELLULOSE

```
=> file reg
=> s 9004-67-5
L42          1 9004-67-5
```
Registry Number for Methylcellulose – in real situation should have other RNs such as for cellulose itself
```
=> file hcaplus
=> s ?cellulose or ?celluloses   {set L43}
```
For terms ending with cellulose or celluloses – as before the use of left-hand truncation stops the automatic searching for plural terms
```
=> s l42 or l43
```
Combined set L44 for the (limited) cellulose concept – could have used more synonyms or other specific cellulose derivatives
```
=> s l44(2a)l31    {set L45}
```
"cellulose" within 3 terms of the form concept
```
=> s l45 and l19
```
cellulose + form + CD
```
=> s l10 and l46
```
cellulose + form + CD + odorous L47
```
=> s l47 and p/dt
=> s l48 not pry.b>2001
=> s l49 NOT 20010502-20011231/PRD.B
=> s l50 not (l26 or l40)
```
This retrieved 4 answers not in previous sets of results including:

```
L51  ANSWER 4 OF 4  HCAPLUS  COPYRIGHT 2012 ACS on STN
AN   1995:275713  HCAPLUS
DN   122:89141
OREF 122:16723a,16726a
TI   Long-lasting fragrance compositions containing hydroxyalkylated
     β-cyclodextrin
……
AB   Long-lasting fragrance compns. contain fragrances( 1-30 weight%) and
     alcs. with addition of hydroxyalkylated β-cyclodextrin.
…..
IT   7585-39-9D, β-Cyclodextrin, hydroxyalkylated
        (long-lasting fragrance compns. containing hydroxyalkylated
        b-cyclodextrin and other ingredients)
IT   7631-86-9, Silica, biological studies   9002-88-4, Polyethylene
     9004-34-6, Cellulose, biological studies
        (powders; long-lasting fragrance compns. containing
        hydroxyalkylated β-cyclodextrin and other ingredients)
```

This same approach could be extended to PVA – although not sure how successful this might be.

Future Search Options

From my initial list of possible searches:

- Combination of all 3 concepts – adhesive + cyclodextrin (CD) + odour
- Adhesives containing a perfume (for other carriers instead of CD)
- CD plus odour plus specific "adhesive materials"
- CD in adhesives

I have constructed searches have looked for items 1 and 3, although further work if necessary further work could be done on both of these.

The second search seems harder to construct although the function terms CLATHRATE and INCLUSION COMPOUNDS are relevant here.

The fourth search would require a closer association between the 2 concepts. The inclusion of Patent Classification codes to retrieve adhesives means that some more thought would be required to ensure that more relevant material was retrieved – for example would this requiring searching the Claims of full-text databases?

In reality an opposition search such as this would stop as soon as I had agreed with my attorney that I had retrieved sufficient material for the preparation of an opposition statement to the EPO. If possible I report relevant documents to my attorney as they are found – this helps us to agree when I can stop searching and also if I need to look for alternative/more focussed prior art to supporting existing documents and arguments.

Case study 2 – Sample answer

Please try to find prior art to possibly invalidate claim 1 of EP 784139 B1 (Vehicular communication system).

Introduction

When constructing the exam questions we wanted to receive both a working strategy to a solution and most of all your reasons for doing things a certain way in order to better assess your knowledge of search types, databases, search tools and strategic planning. We did not always succeed in getting sufficient comments in the answers (e.g. the reasons for choice of database), most probably owing to participants not having had a model of what was expected.

The following gives an overview of a possible course of action. Most of the examples are taken from the mock exams (in Times New Roman, blue), with our annotations in black. It tries to exemplify a promising strategy i.e. examples of how the markers thought the searches could have been constructed and commented.

1. General Preparation

Review the full specification and claims of EP 784139 B1: How did you get a copy of the document? E.g. Patent Office Website: EspaceNet, Depatisnet or database provider (e.g PatBase, Orbit.com) - make sure to pick B1 document.

Even documenting "small" things, e.g. making sure the granted claims are considered (and perhaps comparing them to the published ones to fix relevant dates) - this is easy to overlook in e.g. EspaceNet. If you compare the published claims to granted ones in this case you will see a rather big difference between the two which might put you on the wrong track if cross referencing the claims from the A document instead of the B document. You might e.g. mention PatBase's "compare" feature for accomplishing this (although not yet available at the time of the exam).

2. Key features of the claim

Before setting out on planning the search, all the independent claims should be analysed e.g. from one of the examinee's answers (other forms (tabular) are of course also possible):

A **vehicular communication system** comprising:

an **ignition key** (1) having an information device (2,8) for receiving and storing data;

an **ignition key cylinder** (15);

a **transmission device** (10) for transmitting data to the ignition key information device (2,8) during a predetermined time interval while the ignition key (1) is in the ignition key cylinder (15); and

a **key removal prevention mechanism** for preventing the ignition key (1) from being removed from the ignition key cylinder (15) during at least a portion of the predetermined time interval, characterized in that

the key removal prevention mechanism prevents the ignition key (1) from being removed from the ignition key cylinder (15) in response to a **key interlock actuating signal** outputted by the transmission device (10); and

the transmission device (10) outputs the key interlock actuating signal until the communication between the transmission device (10) and the information device (2,8) ends.

Also these questions should be considered (from one examinee's paper):

What problem does the invention solve? Incomplete data communication in vehicular communication systems.

What is the invention? An ignition key, an ignition key cylinder and a transmission device in which a key removal prevention mechanism and key interlock actuating signal prevent the key to be remove before data have been received and stored.

What does it do? Secure that the communication between the transmission device and receiving information device is complete.

Here would also be a good place to discuss your understanding of the needs of invalidating prior art: e.g. novelty destroying vs inventive step, how to check for possible differences in priority date for single claims due to changes to the specifications in the EPO's online file inspection.

Novelty
For a European patent a novelty destroying document must either be:

- A publication available before the entitled priority date anywhere in the world; or
- A publication that is filed as a European patent application* and have an earlier (entitled) priority date but published after the (entitled) priority date.
  (*when considering applications filed before 13 December 2007, this novelty destroying effect only takes place in those European Contracting States which have been validly designated in the earlier filed application).

Inventive Step
For a European patent inventive step destroying documents must have been publically available anywhere in the world before the entitled priority date. Inventive step arguments are the result of the combination of 2 or more known disclosures provided that it would be obvious to the skilled person to make this combination. These features may be found in a single or several relevant documents/items

3. Choice of database

An explanation of the databases chosen e.g. for a validity search one could choose a full- text database, because also details from the description will serve as prior art for an opposition search and the whole text will be readily available without having to hunt it down separately. This does of course not preclude other databases from being used - other reasoning is possible and valid for e.g. value-added abstracting databases: controlled vocabulary, additional classification, translated foreign publications' abstracts, etc. A database based on patent families will also provide hits in English (or another language familiar to you) even when the oldest and pre-filed document is in an unfamiliar language – should there be subsequent filings. Databases containing literature references could also be considered.

4. Time limits

Identifying the priority date (11.01.1996) as the cut-off for any search carried out and additionally considering application date for novelty only documents or in the case the claims differ between publication and grant (see also above).

5. File wrapper and citations

Most participants choose to browse the file wrapper / look at the examiner citation to learn about the examiner's arguments, so as to not repeat what had already been done and to learn about possible promising classification. They also reviewed citations from other family member's examination procedures. Finding additional arguments not raised by the EPO examiner could be used as a starting point for the search – arguing as to whether you will follow examiner's lead and go more into depth or dismiss examiner's strategy and focus on different aspects.
Look at the kind of documents citations from different family members:

Citations of EP:
EP0378945
EP0667597
FR2589930
GB2290342

Citations of US:
US5539260
US5555863
US5610574
US5635900

Citations of JP: none
Citations of DE: none

6. Classification

Finding relevant classification from the citations and other methods including how you found them:
A sample answer:

The EP document is viewed in Epoline Register Plus. The search report is found. It is noted that only A-documents have been found during the previous search. It is also noted that the EPO-searcher have searched in the class-area E05B and G07C. In a discussion with a patent agent or the client it should be discussed whether to trust the EPO search and exclude the class area E05B and G07C from the search or if these classes should be included. This could also be dependent of the time available.

The search report is also checked for classification of the EP-document and more relevant classes are hereby found (E05B49/00 and G07C5/08).

The documents found in citation search and in the search report is analyzed for relevant classes and words or synonyms. Also it will be relevant to analyze the documents for German and French words to be used as synonyms to get a better coverage of the search and also use dictionaries to find foreign language words. This is not done in this exam since the time is limited.

Or (from another result):

I have a look on the classifications using the hyperlinks on the classifications listed in the family result

B60R25/00: Vehicle fittings for preventing or indicating unauthorised use or theft of vehicles
B60R25/02 . operating on steering mechanism
:
B60R25/04 . preventing use of engine
:
G07C9/00E4 . . Electronic locks operated with bidirectional data transmission between data carriers and locks[N0111]
:
G07C5/00: Registering or indicating the working of vehicles

G07C5/08 . Registering or indicating performance data other than driving, working, idle, or waiting time, with or without registering driving, working, idle, or waiting time
:

H04Q9/00 Arrangements in telecontrol or telemetry systems for selectively calling a substation from a main station, in which substation desired apparatus is selected for applying a control signal thereto or for obtaining measured values therefrom
:

S07C: INDEXING SCHEME RELATING TO TIME OR ATTENDANCE REGISTERS; REGISTERING OR INDICATING THE WORKING OF MACHINES; GENERATING RANDOM NUMBERS; VOTING OR LOTTERY APPARATUS; ARRANGEMENTS, SYSTEMS OR APPARATUS FOR CHECKING NOT PROVIDED FOR ELSEWHERE
S07C9/00E . Electronically operated locks; Circuits therefor; Nonmechanical keys therefor, e.g. passive or active electrical keys or other data carriers without mechanical keys
:

S07C9/00E12F: . . . with passive electrical components, e.g. resistor, capacitor, inductor
S07C9/00E14C2 . . . . by induction
:

Other options would be to include classes from other systems like F-terms or Derwent MC with an explanation of why they were chosen.
From the EP document: **ECLA:** B60R25/02; B60R25/04; G07C5/08; G07C9/00; H04Q9/00; E05B49/00; G07C5/08; G07C5/08R2B; G07C9/00E4
from the DE part: **DeKla**: B60R25/04A1

From the corresponding JP:
IPC: B60R25/02; B60R25/04; G07C5/08; G07C9/00; H04Q9/00; B60R25/02; B60R25/04; H04Q9/00; G07C5/08R2B; G07C9/00E4
FI: B60R25/04/610; B60R25/02/606; H04Q9/00/301

F-term: 3D019 5K048 5K048/AA15 5K048/BA42 5K048/BA54 5K048/DC01 5K048/EA14 5K048/EA16 5K048/EB02 5K048/EB06 5K048/EB11 5K048/EB13 5K048/GC03 5K048/GC05 5K048/HA04 5K048/HA06

From the corresponding US:
IPC: B60R25/02; B60R25/04; G07C5/08; G07C9/00; H04Q9/00; G08B0/00; G07C5/08R2B; G07C9/00E4
USCla: 340/286.01 ; 307/10.3; 307/10.5; 340/426.28; 340/426.3; 340/5.61

Derwent Manual Codes: T01-J07C; T05-G01; W02-C02B; W05-D03X; W05-D04; W05-D07D; X22-A08C; X22-X

Discuss which of the classes to use for your search and which were not used including the definition of the classification symbols for better understanding. How does your choice depend on database chosen, interpretation of claims, and applicability of classification symbols (e.g. IPC vs ECLA)?

7. Keywords / concepts.
A table like the ones below will help keeping concepts apart

Elements	**Vehicle**	**Key removal prevention**	**transmission**	**Keys / locks**	
Keywords	vehicle or vehicular or car% or automobil*	Key near (Remov* or restrain or retain*)	communicat* or transmit* or transceiv* or receiv* or antenna or wireless* or transponder%		
International class		E05B11/00	G07C9	E05B19 E05B65	
European class		E05B11/00	G07C9 S07C9/00E12F, S07C9/00E14C2	E05B19 E05B65	
US class		70/389	307/*		
JCT				2E250*	

Another example:

Relevant Search Terms			
Ignition key	interlock	Removal prevent	Reception device
Starter key	Lock	Pull out	Receiver
Ignition key cilinder		Removal	Antenna

Ignition key retainer	actuator		Coil
		Switch	
	Turn on/off	Cipher code	Transmitter
Engine start		Signal	Data storage
	Theft		
Motor start	Antitheft	Key interlock/lock	Microcomputer
	Unauthorised	Key interlock	CPU
Vehicular	Unauthorized	Block	EEPROM
Vehicle		Device	Time interval
Car		Actuator	

Having some background into where the location of big car manufacturer may direct you to additional keywords in other languages which would further help your search.

8. Annotated search history

An annotated search history is the best kind of answer as it gives an easy-to-follow insight into what was searched and why. One example without annotations – reasoning behind the strategy can only be guessed:

Set	Items	Description
S1	2814	IC='B60R-0025/02'
S2	46073	LOCK?(5N)(KEY OR KEYS OR CYLINDER)
S3	342	IC='H04Q-0009/08'
S4	344136	(DATA OR DATUM OR INFORMATION OR VALUE? OR SETTING?)(5N)COMMUNICA?
S5	1586315	AUTOMOBIL? OR MOTORCYCL? OR MOTOR()CYCL? OR VEHICLE? OR VEHICUL?
S6	1	S1 AND S3
S7	48091	S1 OR S2
S8	25778	S3 OR (S4 AND (S5 OR IC=B60))
S9	221484	IC=B60R
S10	26106	S3 OR (S4 AND (S5 OR IC=B60R))
S11	154	S7 AND S10
S12	99382	IGNITION
S13	0	S12 AND S13
S14	22	S11 AND S12
S15	2762	AD=19960111/PR
S16	584	S15 AND AD<19960111
S17	4	S14 AND AD<19960111

Or much better – an excerpt with annotations which would be easier to follow in chronological order. In this case no date limitations were used,but it demonstrates a good use of command language and database features.

12	(10 or 11) and tac=(vehicle or vehicular or car% or automobil*)	78	Should be viewed (narrow, expanded in SS24-25)
11	uc=70/389	200	
10	sc=E05B11/00	592	
9	tac=(key removal)	130	Small search for statistical analysis
8	5 and 6 and 7	303	Small search for statistical analysis
7	tac=(transmission or transmit*)	more than 100,000	
6	tac=(key near remov*)	7312	
5	tac=(vehicle or vehicular)	more than 100,000	
4	pn=(gb2290342 or fr2589930 or ep0378945 or ep0667597)	4	EPO search report
3	2 and pd<2003	16	
2	ctf 1 or ctb 1	27	Should be viewed
1	pn=ep0784139	1	EP-document, Should be viewed

Modular histories with few keywords / classes per query line are preferred because they give more flexibility and help avoid misspellings / miscopying. Annotations or explanations of the reasoning behind a certain strategy allow some insight into the thought process behind the strategy (e.g. use of truncation, proximity and combinations of search terms). As there is no right or wrong way to carry out a search, it is important to explain why something was carried out in a particular way. Short forms of commands like in search step 2 show mastery of commands language. The history could also include discussion of whether to start narrow and then expand or start from one concept and then narrow down whether to start over at a certain point, and how to exclude hits from previous steps and so on.

9. Documents possibly found:

This was not required by the exam but it was used as a check.....

DE4339014
DE3225754
EP314143
GB2290342
EP639287

DE3436761
EP158354
FR2661447
GB2188463
GB2009299
GB2161855
EP673463
EP503695
EP690190
WO199533114
GB1312942
JP7246915