ESCO in EURES

Use of ESCO by public employment services for matching vacancies and job seekers and for developing classification systems

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EURES, The European network of employment services

Welcome to the EURES 30th Anniversary

Ready to find opportunities, to broaden your horizons, and explore millions of possibilities in Europe? Take a look at EURES, the European network of employment services. We are turning 30 this year, and we wish to celebrate with you by giving you a special gift: if you are a jobseeker, you may find a job, and if you are an employer, you may find the best worker!

For three decades, EURES has been changing the lives of Europeans, helping individuals discover jobs in Europe and employers find staff. With a vast network in 31 countries and nearly 1,000 advisers from public and private employment services, EURES is your fair and reliable companion on this adventure.

But EURES is more than just a job portal; it's your go-to place for a wealth of information and guidance on living and working conditions and labour market information across the continent. For those trying to recruit or find jobs in border regions, specialised support is available.

Creating your profile on the EURES portal is the first step to opening doors to this world of opportunities. Employers can discover talents with a simple search, and jobseekers and workers can explore millions of vacancies that match their skills and qualifications. It's not just about finding a job; it's about crafting your European professional career.

Would you like to join us in our EURES' 30th-anniversary celebration? Visit the EURES portal today, create your account, and start your secure and new journey into Europe. Find your job or find your staff this year.

Discover all about EURES at eures.europa.eu. >

The **EURES portal** is an important tool for the EURES network.

Jobseekers can search Job Vacancies or find them automatically by matching their CV.

Employers can find candidates by searching the CVs

The network of 1000 EURES Advisers from 31 countries can facilitate job mobility by searching or matching all available CVs and Job Vacancies across Europe

Today the portal can match:
2.900.000 Job Vacancies
1.200.000 CVs

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Why EURES needed ESCO

- Challenge 1:
  Matching and searching across 31 countries required the use of codified information to bridge the language differences.

- Challenge 2:
  The description of occupations (offered job, desired job, work experience) is an important part of the search & match logic. The available ISCO classification did not provide the detail level required

- Challenge 3:
  Skills-based matching. Matching using skills sets instead of occupation names enables to offer more opportunities.

The legend says… during a walk with his dog, the EURES portal team lead had this idea of a European classification that would solve these challenges. The idea of **ESCO** was born.

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The solution : ESCO

The **ISCO** classification stopped at 4 levels. It provides **occupation groups** to express the desired and offered job content and experience.

ESCO continues further from these 4 levels and ads up to 4 extra levels of detail where needed. It provides much more detailed **occupation names.**
When matching and searching, results can be much more accurate.

The ESCO project approach with experts in each country ensured a correct translation for each occupation in all languages. When an occupation is selected in German, the Greek translation should cover the same understanding of the occupation.

Conclusion: ESCO provides a much more detailed language to express the occupations involved in job vacancies and CVs that is fit for the European labour market.

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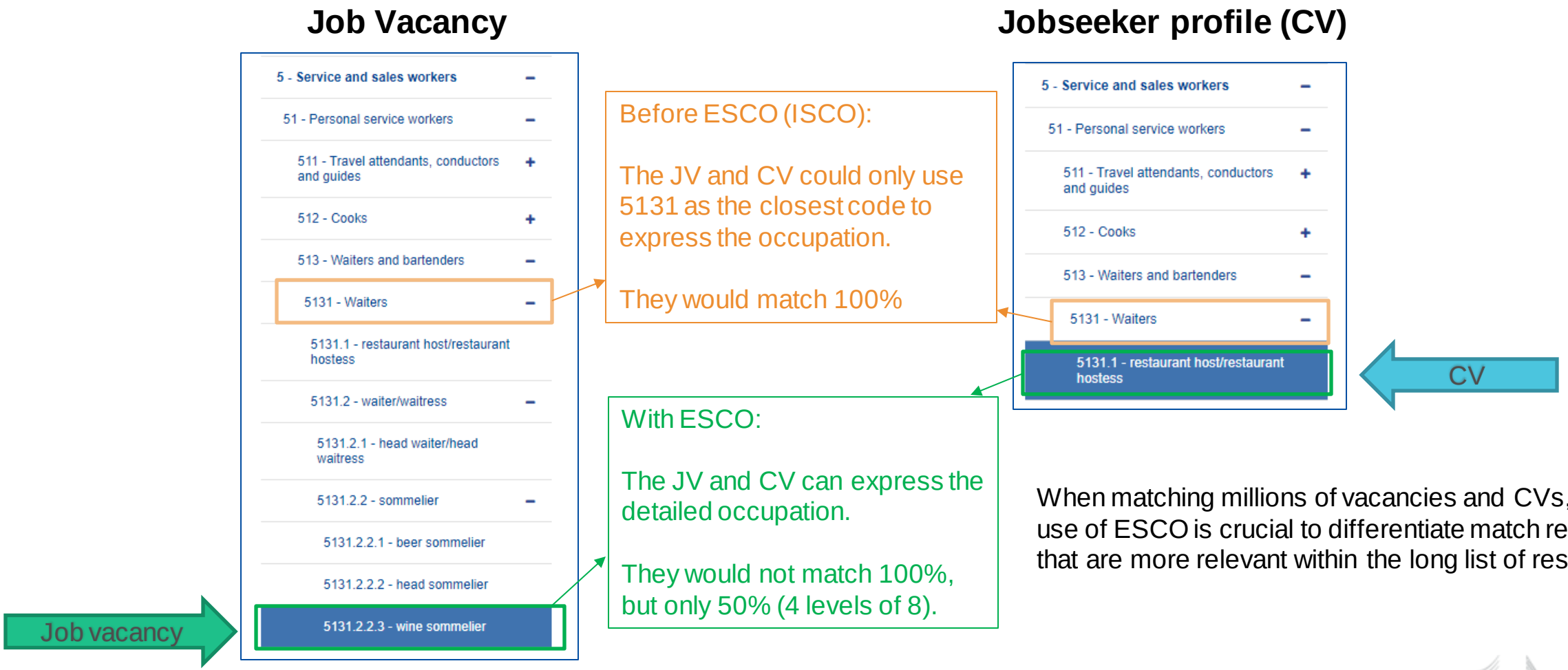
Why the detail from ESCO matters when matching

Consider a Job vacancy for a **Wine Sommelier**, and a CV that represents a **restaurant host(ess).**
How does ESCO improve the matching between them ?



When matching millions of vacancies and CVs, the use of ESCO is crucial to differentiate match results that are more relevant within the long list of results.

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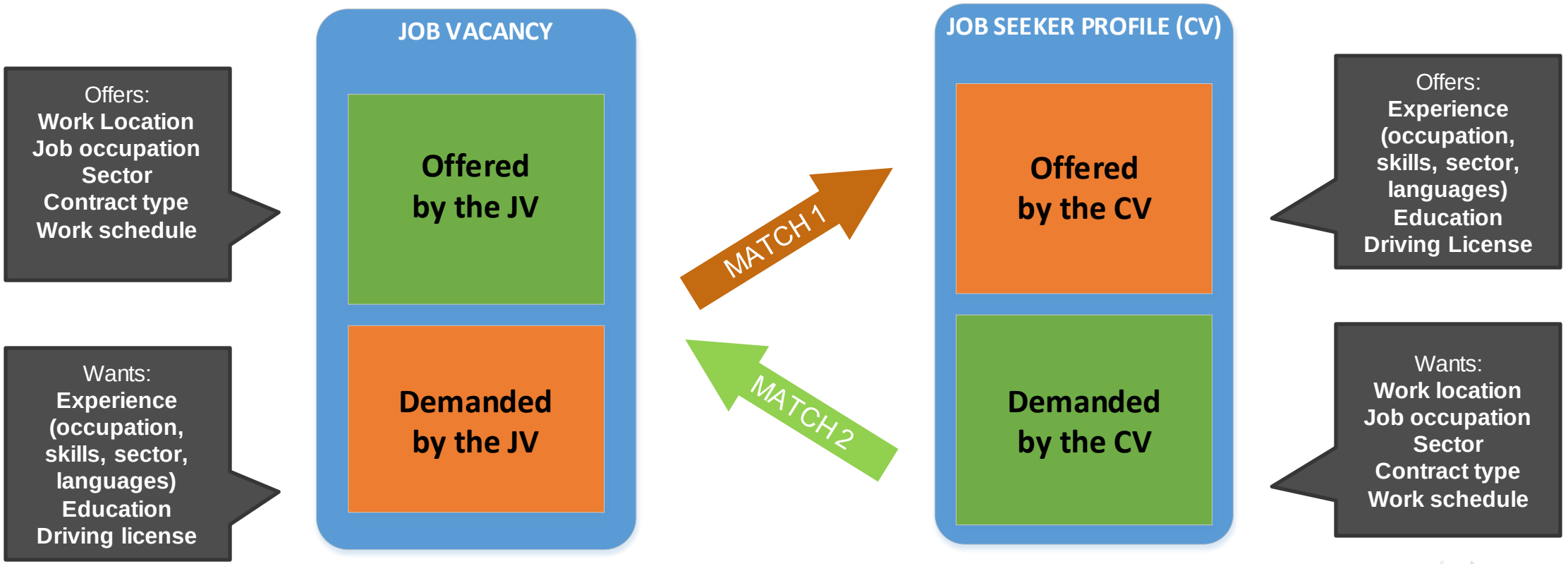
Basics of matching in EURES

Both parties in the matching have something to **offer** and something they **want.**

What one party **wants**, should be **offered** by the other and vice versa

The best match is when both parties find their demands met by the other party



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How is ESCO used for matching in EURES

ESCO improves searching, but the most of its potential is used in matching.

The overview below shows the different **score elements** used in the EURES matching engine.
(Elements in *italics* will be available in the next release planned for June.)

ESCO is at the core of the matching scores that determine **the actual job content and experience**.
Next to this, it also supports the matching of the **language experience.**

Wanted by	DIMENSION	ESCO usage
Job Vacancy	**Experience – expressed as occupation**	ISCO / ESCO occupations
Job Vacancy	**Experience - expressed as job related skills**	ESCO skills + ESCO occupations
Job Vacancy	***Experience – expressed as languages***	ESCO skills
Job Vacancy	**Experience – in a sector**	
Job Vacancy	**Education**	
Job Vacancy	**Driving license**	
CV	**Work location**	
CV	**Job desired – expressed as occupation**	ISCO / ESCO occupations + *ESCO skills*
CV	**Business sector**	
CV	***Contract type***	
CV	***Work schedule***	

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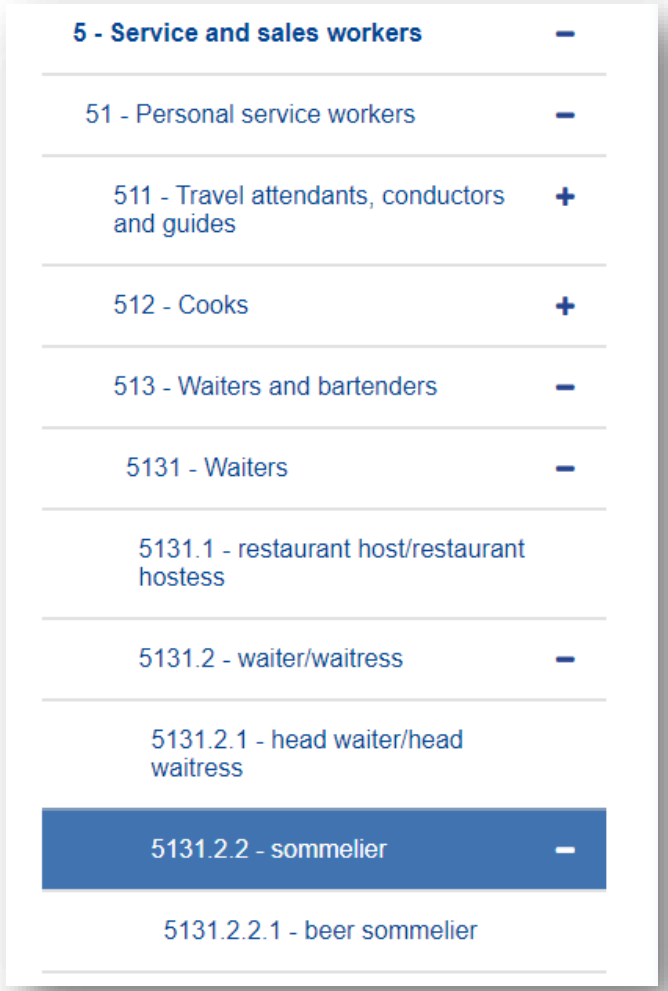
ESCO in EURES matching - Occupations

ESCO **occupations** are used to determine **2 score elements** :

1. If the expected **work experience** from a job vacancy is met by the work experience from the CV
2. If the **desired occupations** mentioned by the job seeker in the CV are met by the offered job in the job vacancy.

By considering each occupation code as a full tree, including the parents in the ESCO tree, matching can be done between occupation codes that are not at the same level of detail.



The Job Vacancy demands experience as a ***sommelier*** (Code 5131.2.2)

JV (level 6)

CV1 66%

Example 1:
CV1 offers experience as *Waiters* – 5131 (level 4)

CV1 matches 4 levels of 6 from the demand, being 66%

CV2 83% (5/7) matches at 5131.2

CV3 100% (6/6)

CV4 100% (6/6)

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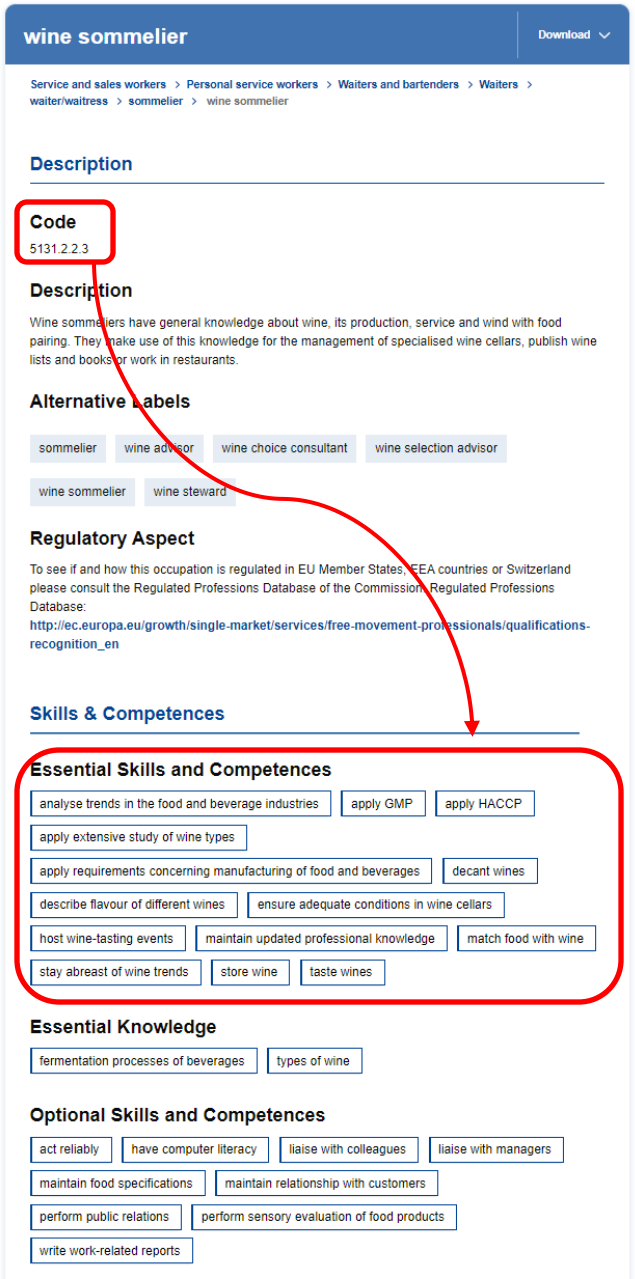
ESCO in EURES matching – Skills definitions



ESCO skills to be used in EURES matching can be obtained in **2 ways** for vacancies and CVs.

1. Skills that are present as codes in the Job vacancies or CVs provided by the Member States. These skills are called "**factual skills**" in the matching formula.

2. When there is an ESCO occupation code available, extra skills are added by retrieving the essential skills from the ESCO taxonomy for the occupation code. In the example shown here, the occupation code 5131.2.2.3 (wine sommelier) would lead to adding the highlighted essential skills. There skills are called **"derived skills"**

Doubles are filtered out and derived skills are only added when not already present as factual

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ESCO in EURES matching – Skills matching

How do we match these **factual** and **derived** skills against each other ?

The matching is done by comparing the ESCO URIs (http://data.europa.eu/esco/skill/61970f8b-099c-4e7e-82e0-9ccdced0baf3) from the demanded side to the offered side.

To promote the **factual** skills in the outcome, the matching engine will use an "affinity table". Currently it is set to only "penalise" the score to 50% when **demanded factual** skills are only met by **derived offered** skills. All other combinations are considered worth of 100%

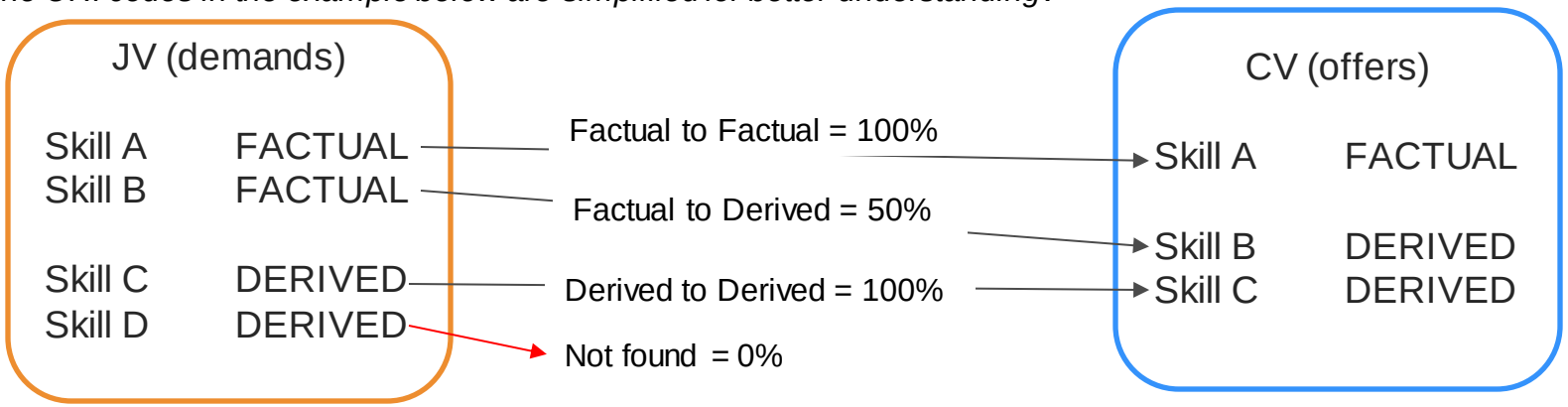
AFFINITY TABLE

"demanded code", "offered code", "score to return"

"DERIVED", "DERIVED", 100
"DERIVED", "FACTUAL", 100
"FACTUAL", "DERIVED", 50
"FACTUAL", "FACTUAL", 100

As a result, the highest scoring CV would be the one that has all demanded skills present as factual, where CVs that have some only present "derived" will score a bit lower, bringing them lower in the result list.

Example : A JV expects 4 skills to be present as work experience. It's matched against a CV
The URI codes in the example below are simplified for better understanding.



For expected work experience, we expect ALL demanded skills to be present in the CV, so the total score for this JV-CV pair for SKILLS experience is **62,5%** (250/4)

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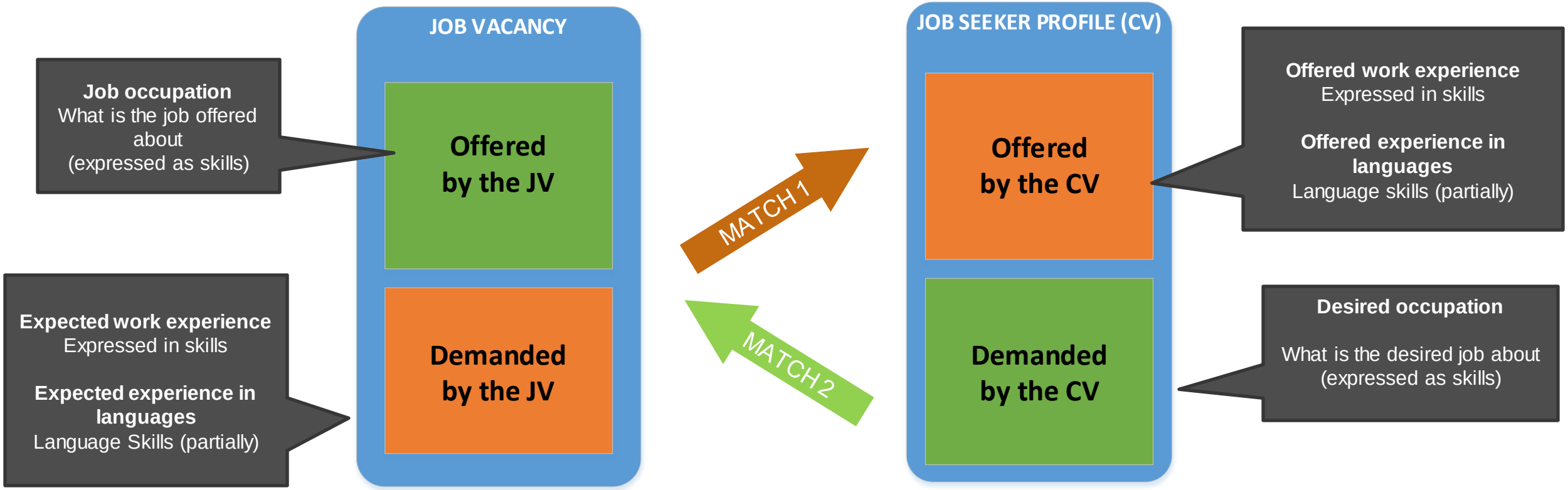
ESCO in EURES matching – Skills matching

How is skills-based matching used in EURES ?
Skills are used in the calculation of 3 scores



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How skills-based matching can make the difference

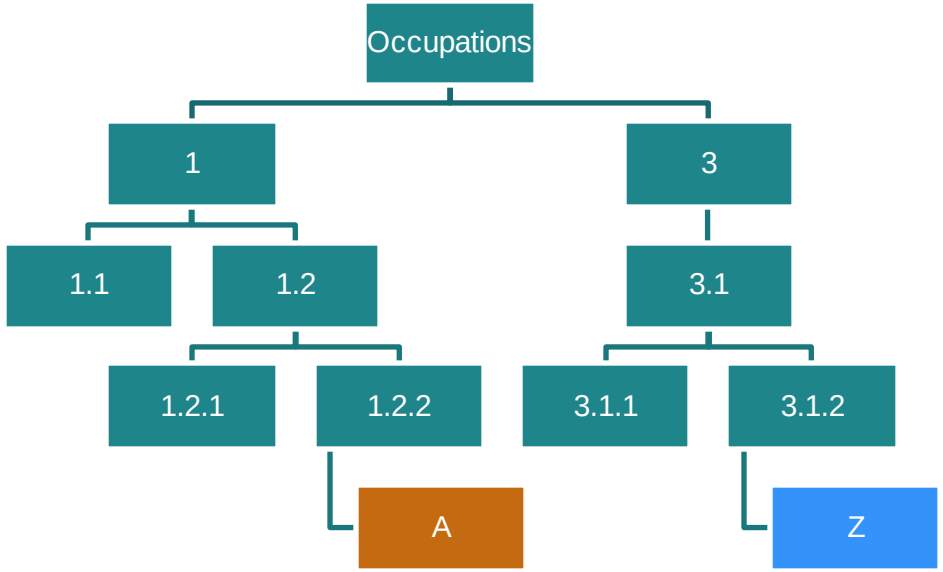
Consider the example below, where occupation A is desired by the jobseeker, but the vacancy offers occupation Z

CV wants

Occupation A

Job Vacancy offers

Occupation Z



If we only consider the ESCO occupation tree, they might be very *far* from each other and score 0%

But, if we bring these occupations to their skills…
The offered occupation Z may match 75% of the desired skills.

Occupation A	Skill A
	Skill B
	Skill C

Occupation Z	Skill A
	Skill B
	Skill X

In the upcoming June release of the EURES portal matching engine, this skills-based matching will be used **in addition to** the occupation based matching. The best score of the 2 calculations will be used to determine the jobs that match the desire of the jobseeker.

This will increase the potential jobs offered to the jobseeker and could lead to a discovery of new job opportunities that offer the same skills set as the occupation that they were looking for.

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ESCO and EURES - conclusion

- ESCO provides the necessary extra detailed and codified information of occupations and skills, while supporting all European languages used in EURES.

- EURES uses this detailed dictionary in their standards (specifications) for Job vacancies and CVs to enable their exchange across the EURES network in a common language.

- EURES uses this information and knowledge within the ESCO taxonomy extensively in the core matching score elements.

  - Using **ESCO occupations**, combined with the knowledge in the ESCO taxonomy.

  - Using **ESCO skills** to match at an even more detailed level, while also offering a wider range of opportunities compared to purely occupation-based matching.

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