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**ADVANCED ACCESSIONING SYSTEM:
DOCUMENTATION ON YEAR 1 PROTOTYPE PERSON-JOB
MATCHING TOOL**

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**June 2019
Interim Report**

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1.0 BACKGROUND

The primary objective of this initiative is to develop a tool to optimize organizational and individual outcomes when matching enlisted personnel (applicants or trainees) to entry-level jobs. A core premise of the person-job matching tool is that organizational and individual outcomes for the Air Force are optimized by the effective management of job-relevant talent pools. Talent pools are effectively managed when the aggregate supply of talent within the applicant or accessions population is optimally matched to jobs (or job clusters) to minimize over- and under-qualification, within and across jobs. Accordingly, the tool recommends “best” job matches, based on the projected payoff(s) from combining the selected inputs (person, job, organization) when matching people among qualifying jobs to minimize the over or under supply of talent.

The primary users of the tool are:

- Recruiters and the enlisted applicants (pre-enlistment)
- Counselors and the enlisted trainees (post-enlistment, during Basic Military Training (BMT))

The current effort was planned as a two-year (24 month) development effort, organized as follows:

- *Year One:* Develop and evaluate prototype enlisted person-job matching tool (algorithms and software).
- *Year Two:* Refine and evaluate the tool with dynamic modeling capability.

The following principles guided the development of the tool in Year One:

- The primary purpose of the tool is to identify person-job matches that optimally balance multiple and potentially competing objectives (organization, person, and job).
- The tool should incorporate equifinality into optimization to maximize the number of matches (or paths to an optimal or near-optimal match), where feasible.
- The tool should be sufficiently flexible to handle changes in the (re)weighting of objectives, as needed (e.g., by user, by use case).
- The tool should be sufficiently flexible to handle organization-side, person-side, and job-side changes over time (e.g., changes in USAF personnel management objectives, changes in enlisted jobs or standards, etc.).
- The tool should be sufficiently flexible to handle cross-Recruiting Squadron (RSC) or cross-BMT class differences or temporal changes in guidance over time.
- The tool’s underlying logic for matching people to jobs is sufficiently transparent and interpretable to stakeholders (i.e., what’s going on under the hood is not a complete “black box”).

The primary Year One deliverables are:

- A software-enabled tool for optimizing enlisted person-job matches, pre- and post-enlistment, developed using open source or commercial off-the-shelf technologies (e.g., Excel, R).
- A report summarizing activities for each year.

The current report summarizes and documents development of the Year One prototype of the person-job matching tool.

2.0 OVERVIEW OF PERSON-JOB MATCHING TOOL

The primary objective of the person-job matching tool is to optimize organizational and individual outcomes by recommending the “best” job matches to a person. The person-job matching tool identifies the “best” job matches based on the projected payoff(s) from combining selected inputs (person, job, organization) when matching a person among qualifying jobs.

Table 1 summarizes the primary users and corresponding use cases of the tool that informed the tool’s development.

Table 1. Primary Users and Use Cases of Person-Job Matching Tool

<i>When</i>	<i>Who</i>	<i>Why</i>	<i>How</i>
Pre-Enlistment	Recruiters and enlisted applicants	Career-job exploration	One enlisted applicant at a time
Post-Enlistment	Counselors and enlisted trainees (in BMT)	Job classification	One enlisted trainee at a time

Figure 1 shows the intended workflow when using the tool. Applicant’s (Trainee’s) information includes indicators of cognitive and non-cognitive attributes. The DoD AFQT (Armed Forces Qualification Test) is a weighted composite of the Armed Services Vocational Aptitude Battery (ASVAB) verbal and math subtests and is used by all U.S. military services for enlistment qualification. The USAF MAGE (Mechanical, Administrative, General, and Electronics) aptitude composites are used for qualification into USAF training specialties. The AF-WIN (Air Force Work Interest Navigator) score is an index of person-job fit based on the congruence between a person’s work interests and job characteristics (work environment and tasks). TAPAS (Tailored Adaptive Personality Assessment System) scores reflect personality characteristics, The CT (Cyber Test) score is an indicator of cyber knowledge. PULHES (Physical ability; Physical condition, Upper extremities, Lower extremities, Hearing, Eyes, and Psychiatric) provides a measure of physical ability.

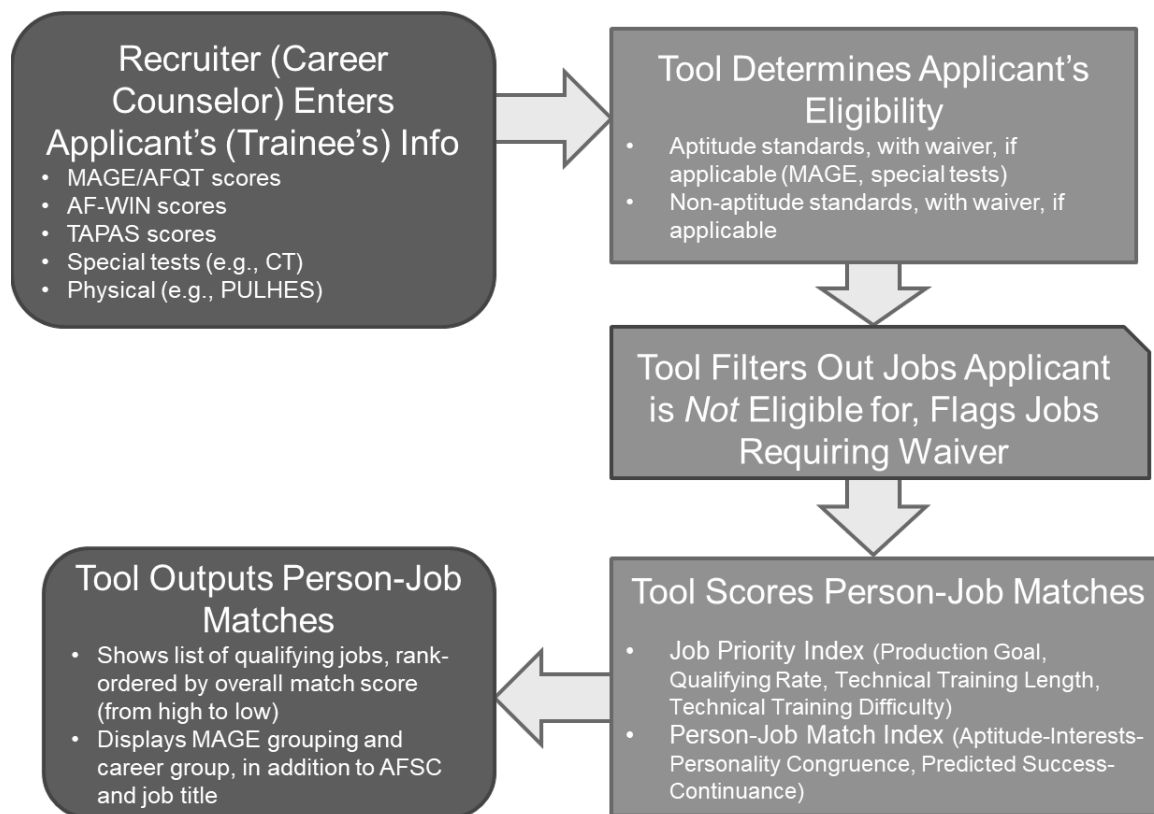


Figure 1. Workflow of Person-Job Matching Tool

As illustrated in Figure 1, the primary inputs (upper left) are an enlisted personnel's (applicant's or trainee's): (a) MAGE/AFQT/ASVAB¹ scores; (b) AF-WIN scores; (c) TAPAS scores; (d) special test scores (e.g., Cyber Test, CT score), where applicable; and (e) physical profile (i.e., PULHES). The primary output (bottom left) is a list of jobs that the person qualifies for, rank-ordered by a projected payoff score (from highest to lowest), with the applicable Career Field and Aptitude Area. The projected payoff score is a function of the scores on the: (a) job priority index and (b) person-job match index.

The prototype person-job matching tool was built in an Excel Workbook. Table 2 summarizes the main components (spreadsheets) comprising the prototype tool and their function. Each of the components of the tool are described in greater detail in the subsequent section.

Table 2. Summary of the Main Components of the Person-Job Matching Tool and Their Function

<i>Component</i>	<i>Function</i>
<i>Applicant (Trainee) Score Entry</i>	Form for entering person's (applicant's or trainee's) qualifying information: (a) MAGE/AFQT/ASVAB scores; (b) AF-WIN scores; (c) TAPAS scores; (d) special test scores (e.g., Cyber Test, CT), where applicable; and (e) physical profile (i.e., PULHES).
<i>P-J Matches</i>	List of jobs that the person qualifies for, rank-ordered by an overall projected payoff score (from highest to lowest). The job list is generated from the overall payoff scores and corresponding rankings computed in the <i>Projected Payoff</i> spreadsheet.
<i>Qual Standards</i>	Table with the current qualification standards on aptitude (MAGE/AFQT/ASVAB, special tests), non-aptitude (TAPAS), and physical (PULHES) for each entry-level job, where applicable.
<i>Job Eligibility</i>	Compares person's scores (from the <i>Applicant [Trainee] Info Screen</i>) to the current qualification standards (from <i>Qual Standards</i>) to determine eligibility to qualify for each job (Yes-No).
<i>Talent Profiles</i>	Table with the talent profiles and estimated validity of each KSAO (predictor) set, aptitude and non-aptitude, by job. The talent profiles define the KSAO knowledge, skills, ability, and other characteristics) profile of successful accessions in each job. The profiles and validity estimates, in combination with the person's scores on corresponding predictor tests (or measures), are used to compute the Person-Job Match Index score by job (in the <i>P-J Match Index</i> spreadsheet).
<i>Job Priority Index</i>	Computes a Job Priority Index score for each job. The Job Priority score reflects the relative importance to the Air Force of filling open position(s) to each job. The Job Priority score is computed from: (a) production goal; (b) projected qualifying rate; (c) technical school length (in days); and (d) technical school difficulty, for each job.
<i>P-J Match Index</i>	Computes a Person-Job (P-J) Match Index score for each job. The P-J Match score is computed from: (a) a congruence score between the person's scores on a predictor set and the corresponding job-specific talent profile (aptitude, non-aptitude) (from the <i>Talent Profiles</i> spreadsheet); and (b) the validity coefficient for the same predictor set(s) (also, from the <i>Talent Profiles</i> spreadsheet).
<i>Projected Payoff</i>	Computes the projected payoff score for each job. The Projected Payoff score is computed from: (a) the Job Priority score (from the <i>Job Priority Index</i> spreadsheet); and (b) the P-J Match score (from the <i>P-J Match Index</i> spreadsheet).

3.0 DESCRIPTION OF PERSON-JOB MATCHING TOOL

3.1 Applicant (Trainee) Score Entry (Primary Input)

Applicant (Trainee) Score Entry is to enter an applicant's (or trainee's) scores on select aptitude (e.g., MAGE/AFQT/ASVAB) and non-aptitude (e.g., AF-WIN, TAPAS) tests. Figure 2 shows a screenshot of the *Applicant (Trainee) Score Entry* spreadsheet.

Date	
4/25/2019	

MAGE	
Mechanical (M)	65
Administrative (A)	65
General (G)	65
Electronics (E)	65

AFQT / ASVAB	
AFQT Percentile	65
General Science (GS)	
Arithmetic Reasoning (AR)	
Mechanical Comprehension (MC)	
Auto & Shop Information (AS)	
Mathematics Knowledge (MK)	
Electronics Information (EI)	
Verbal Expression (VE)	

Special Tests	
Cyber Test (CT)	
Defense Language Aptitude Battery (DLAB)	
PLACEHOLDER	
PLACEHOLDER	

AF-WIN	
PLACEHOLDER	
PLACEHOLDER	
PLACEHOLDER	
PLACEHOLDER	

Physical	
Physical Stamina (P)	2
Upper Body (U)	2
Lower Body (L)	2
Hearing (H)	1
Eyes (E)	1
Stability (S)	2

TAPAS	
PLACEHOLDER	
PLACEHOLDER	
PLACEHOLDER	
PLACEHOLDER	

Match

Figure 2. Screenshot of Applicant (Trainee) Score Entry Spreadsheet

The scores entered on the form automatically populate the *Job Eligibility* and *P-J Match Index* spreadsheets. Additional information on how different spreadsheets use the inputted scores from the *Applicant (Trainee) Score Entry* is presented in their respective sections.

3.2 P-J (Person-Job) Matches (Primary Output)

P-J Matches is the primary output screen. Figure 3 shows a screenshot of the *P-J Matches* output. As shown in Figure 3, the output screen lists the jobs that the person qualifies for, rank-ordered by the overall projected payoff score (from highest to lowest). The job list is generated from the overall projected payoff scores and corresponding rankings computed in the *Projected Payoff* spreadsheet. The *P-J Matches* output also displays the Career Group and Aptitude Area, in addition to the Air Force Specialty Code (AFSC) and job title.²

² The Air Force may want to consider introducing a Guaranteed Career Group (GCG) as an enlistment option. Doing so carries the potential to increase flexibility when matching people to jobs, thereby, improving optimization, in the

Date <input type="text" value="4/25/2019"/>			
AFSC	Job Title	Career Group	Aptitude Area
3P0X1	Security Forces	Support	General
2A6X2	Aerospace Ground Equipment	Logistics & Maintenance	Mechanical or Electronic
2A5X4	Refuel/Bomber Aircraft Maintenance	Logistics & Maintenance	Mechanical
3E9X1	Emergency Management	Support	General
2A5X1	Airlift/Special Mission Aircraft Maintenance	Logistics & Maintenance	Mechanical
2A7X2	Nondestructive Inspection	Logistics & Maintenance	Mechanical
3E4X1	Water and Fuel Systems Maintenance	Support	Mechanical or Electronic
4D0X1	Diet Therapy	Medical	General
Back			

Figure 3. Screenshot of P-J Matches Output Spreadsheet

3.3 Qual (Qualification) Standards

Qual Standards is a table listing the current operational aptitude (e.g., MAGE/AFQT/ASVAB, special tests) and non-aptitude (e.g., TAPAS, PULHES) standards for each entry-level job, where applicable. Figure 4 shows a screenshot of the Qual Standards spreadsheet. The Air Force Enlisted Classification Directory (AECD) is the primary source for this information.

Job_No	Career Group	Aptitude Area	AFSC	Job Title	AFQT/MAGE					Rule
					AFQT	M	A	G	E	
1	Operations	General	1A0X1	In-Flight Refueling				55		Single
2	Operations	General	1A1X1	Flight Engineer				57		Single
3	Operations	General	1A2X1	Aircraft Loadmaster				57		Single
4	Operations	Electronic	1A3X1	Airborne Mission Systems Operator					70	Single
5	Operations	General	1A8X1	Airborne Cryptologic Language Analyst				72		Single
6	Operations	General	1A8X2	Airborne ISR Operator				72		Single
7	Operations	Mechanical or General	1A9X1	Special Missions Aviation		60		57		AND
8	Operations	Administrative	1C0X2	Aviation Resource Management			41			Single
9	Operations	Mechanical or General	1C1X1	Air Traffic Control		55		72		AND
10	Operations	Mechanical or General	1C2X1	Combat Control		55		55		AND
11	Operations	Administrative or General	1C3X1	Command Post			55	67		AND
12	Operations	General	1C4X1	Tactical Air Control Party (TACP)				49		Single
13	Operations	General	1C5X1	Command & Control Battle Management Ops				55		Single
14	Operations	Electronic	1C6X1	Space Systems Operations					70	Single
15	Operations	Mechanical or General	1C7X1	Airfield Management		40		50		AND
16	Operations	Electronic	1C8X1	Ground Radar Systems					70	Single
17	Operations	Electronic	1C8X2	Airfield Systems					70	Single
18	Operations	General	1N0X1	Operations Intelligence				57		Single
19	Operations	General	1N1X1	Geospatial Intelligence				66		Single
20	Operations	General	1N2X1	Signals Intelligence Analyst				72		Single
21	Operations	General	1N3X1	Cryptologic Language Analyst				72		Single
22	Operations	General	1N4X1	Fusion Analyst				62		OR
23	Operations	Mechanical	1P0X1	Aircrew Flight Equipment		40				Single
24	Operations	General	1S0X1	Safety				55		Single
25	Operations	General	1T2X1	Pararescue				44		Single

Figure 4. Screenshot of Qual Standards Spreadsheet

aggregate, when other practical constraints need to be considered (e.g., training seat availability). The Specialized Career Fields (SCFs) concept, previously proposed by the Air Force, represents another potential enlistment option that would accomplish the same objective.

3.4 Job Eligibility

Job Eligibility determines the person's eligibility to qualify for each entry-level job. Figure 5 shows a screenshot of the *Job Eligibility* sheet.

		AFQT	M	A	G	E	CT	DLAB	P	U	L	H	E	S				
		65	65	65	65	65	0	0	2	2	2	1	1	1				
Job_No	AFSC	AFQTqual	Mqual	Aqual	Gqual	Equal	MAGE Qualified (Y/N)	Ctqual	DLABqual	Spec Tests Qualified (Y/N)	Pqual	Uqual	Lqual	Hqual	Equal	Squal	PULHES Qualified (Y/N)	OVERALL Qualified (Y/N)
1	1A0X1	NA	NA	NA	TRUE	NA	Yes	NA	NA	NA	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	No	No
2	1A1X1	NA	NA	NA	TRUE	NA	Yes	NA	NA	NA	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	No	No
3	1A2X1	NA	NA	NA	TRUE	NA	Yes	NA	NA	NA	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	No	No
4	1A3X1	NA	NA	NA	NA	FALSE	No	NA	NA	NA	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	No	No
5	1A8X1	NA	NA	NA	FALSE	NA	No	NA	NA	NA	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	No	No
6	1A8X2	NA	NA	NA	FALSE	NA	No	NA	NA	NA	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	No	No
7	1A9X1	NA	TRUE	NA	TRUE	NA	Yes	NA	NA	NA	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	No	No
8	1C0X2	NA	NA	TRUE	NA	NA	Yes	NA	NA	NA	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	No	No
9	1C1X1	NA	TRUE	NA	FALSE	NA	No	NA	NA	NA	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	Yes	No
10	1C2X1	NA	TRUE	NA	TRUE	NA	Yes	NA	NA	NA	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	Yes	Yes
11	1C3X1	NA	NA	TRUE	FALSE	NA	No	NA	NA	NA	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	No	No
12	1C4X1	NA	NA	NA	TRUE	NA	Yes	NA	NA	NA	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	No	No
13	1C5X1	NA	NA	NA	TRUE	NA	Yes	NA	NA	NA	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	Yes	Yes
14	1C6X1	NA	NA	NA	NA	FALSE	No	NA	NA	NA	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	No	No
15	1C7X1	NA	TRUE	NA	TRUE	NA	Yes	NA	NA	NA	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	No	No
16	1C8X1	NA	NA	NA	NA	FALSE	No	NA	NA	NA	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	Yes	No
17	1C8X2	NA	NA	NA	NA	FALSE	No	NA	NA	NA	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	Yes	No
18	1N0X1	NA	NA	NA	TRUE	NA	Yes	NA	NA	NA	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	Yes	Yes
19	1N1X1	NA	NA	NA	FALSE	NA	No	NA	NA	NA	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	Yes	No
20	1N2X1	NA	NA	NA	FALSE	NA	No	NA	NA	NA	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	Yes	No

Figure 5. Screenshot of Job Eligibility Spreadsheet

As shown in Figure 5, the person's aptitude and non-aptitude scores, as inputted in the *Applicant (Trainee) Score Entry* spreadsheet, are displayed near the top of the spreadsheet. All possible eligibility requirements and organized by set, aptitude and non-aptitude, are captured underneath the person's scores.³ The person's scores are compared to the current, operational standards (from the *Qual Standards* sheet) to determine their eligibility to qualify for each job, as follows:

- (1) First, the person's score (from the *Applicant (Trainee) Score Entry* sheet) is compared to the corresponding standard (from the *Qual Standards* sheet) for each eligibility requirement (e.g., MAGE, special tests, PULHES). Requirements not used to qualify people to jobs are set to "NA" (not applicable). Requirements where the person's score is greater than or equal to the operational standard (person's score $x \geq$ standard A) are set to "TRUE," while cases where the person's score is less than the standard (person's score $x <$ standard A) are set to "FALSE." Figure 6 shows the previous screenshot with the individual requirements and corresponding eligibility determination by job, highlighted (True/False/or NA).

³ The Year One prototype focused on aptitude and physical requirements, only. The refined Year Two version will extend the requirements to non-aptitude (e.g., TAPAS), where applicable.

[illegible]

(2) Second, a person's eligibility to qualify on the applicable requirements within a set is then aggregated to determine overall eligibility on the set. If the person meets all applicable requirements for the set, then the qualification screen is set to "Yes" (Y). If the person does *not* meet all applicable requirements, then the qualification screen is set to "No" (N). The qualification screen is set to "NA" (not applicable) if none of the requirements within a set apply. Figure 7 shows the previous screenshot, highlighting the requirement set screens and corresponding eligibility determination on each by job (Y/N or NA).

[illegible]

Figure 7. Screenshot of Job Eligibility Spreadsheet, Highlighting the Requirement Set Screen

- (3) Finally, the person's eligibility to qualify is aggregated across all applicable requirement sets to determine their overall qualification for each job. Consistent with the previous step, the overall qualification screen is set to "Yes" (Y) if the person meets all applicable requirements. The overall qualification screen is set to "No" (N) if the person does *not* meet all applicable requirements. Requirement that are "NA" (not applicable) do not factor into determining overall qualification for a job. Figure 8 shows the previous screenshot, highlighting the overall qualification screen and corresponding eligibility determination by job (Y/N or NA).

		AFQT	M	A	G	E	CT	DLAB	P	U	L	H	E	S						
		65	65	65	65	65	0	0	2	2	2	1	1	1						
							MAGE Qualified (Y/N)			Spec Tests Qualified (Y/N)								PULHES Qualified (Y/N)	OVERALL Qualified (Y/N)	
Job No	AFSC	AFQTqual	Mqual	Aqual	Gqual	Equal		Ctqual	DLABqual		Pqual	Uqual	Lqual	Hqual	Equal	Squal				
1	1A0X1	NA	NA	NA	TRUE	NA	Yes	NA	NA	NA	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	No	No		
2	1A1X1	NA	NA	NA	TRUE	NA	Yes	NA	NA	NA	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	No	No		
3	1A2X1	NA	NA	NA	TRUE	NA	Yes	NA	NA	NA	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	No	No		
4	1A3X1	NA	NA	NA	NA	FALSE	No	NA	NA	NA	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	No	No		
5	1A8X1	NA	NA	NA	FALSE	NA	No	NA	NA	NA	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	No	No		
6	1A8X2	NA	NA	NA	FALSE	NA	No	NA	NA	NA	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	No	No		
7	1A9X1	NA	TRUE	NA	TRUE	NA	Yes	NA	NA	NA	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	No	No		
8	1C0X2	NA	NA	TRUE	NA	NA	Yes	NA	NA	NA	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	No	No		
9	1C1X1	NA	TRUE	NA	FALSE	NA	No	NA	NA	NA	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	Yes	No		
10	1C2X1	NA	TRUE	NA	TRUE	NA	Yes	NA	NA	NA	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	Yes	Yes		
11	1C3X1	NA	NA	TRUE	FALSE	NA	No	NA	NA	NA	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	No	No		
12	1C4X1	NA	NA	NA	TRUE	NA	Yes	NA	NA	NA	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	No	No		
13	1C5X1	NA	NA	NA	TRUE	NA	Yes	NA	NA	NA	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	Yes	Yes		
14	1C6X1	NA	NA	NA	NA	FALSE	No	NA	NA	NA	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	No	No		
15	1C7X1	NA	TRUE	NA	TRUE	NA	Yes	NA	NA	NA	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	No	No		
16	1C8X1	NA	NA	NA	NA	FALSE	No	NA	NA	NA	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	Yes	No		
17	1C8X2	NA	NA	NA	NA	FALSE	No	NA	NA	NA	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	Yes	No		
18	1N0X1	NA	NA	NA	TRUE	NA	Yes	NA	NA	NA	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	Yes	Yes		
19	1N1X1	NA	NA	NA	FALSE	NA	No	NA	NA	NA	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	Yes	No		
20	1N2X1	NA	NA	NA	FALSE	NA	No	NA	NA	NA	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	Yes	No		

Figure 8. Screenshot of Job Eligibility Spreadsheet, Highlighting the Overall Qualification Screen

3.5 Talent Profiles

Talent Profiles is a table listing the knowledge, skill, abilities, and other characteristics (KSAOs) profiles of successful accessions and the estimated validity of each KSAO (predictor) set, aptitude and non-aptitude, by job. The profiles and validity estimates, in combination with the person's scores on corresponding predictor tests (or measures), are used to compute the Person-Job Match Index (in the *P-J Match Index* sheet). Figure 9 presents a screenshot of the *Talent Profiles* sheet.

Conceptually, the profiles describe the talent pools successful in each job on selected KSAOs (predictors), in the aggregate. A core premise of the person-job matching tool is that organizational and individual outcomes for the Air Force are optimized by the effective management of job-specific talent pools. Talent pools are effectively managed when the aggregate supply of talent within the applicant or accessions population are matched to jobs to minimize over- and under-qualification, within and across jobs. Operationally, the talent profiles consist of the mean scores (and corresponding standard deviations) on select KSAO (predictor) sets of accessions successful in a job, like so,

$$\text{Talent Profile} = [M/SD_{A1}, M/SD_{A2}, \dots, M/SD_{Ai}] + [M/SD_{B1}, M/SD_{B2}, \dots, M/SD_{Bi}] + [M/SD_{X1}, M/SD_{X2}, \dots, M/SD_{Xi}]$$

KSAO (Predictor)
Set A
KSAO (Predictor)
Set B
KSAO (Predictor)
Set X

Job_No	AFSC	Mean AFQT Score	AFQT SD	Mean MECH (M) Score	MECH (M) SD	Mean ADMIN (A) Score	ADMIN (A) SD	Mean GEN (G) Score	GEN (G) SD	Mean ELEC (E) Score	ELEC (E) SD	AFQT/ MAGE Validity (r)
	MIN	51.43	4.33	41.11	3.50	55.63	5.48	46.59	4.46	50.28	3.81	0.04
	MAX	93.37	16.79	95.07	22.03	93.06	15.97	93.68	19.70	95.01	19.10	0.93
1	1A0X1	75.48	12.69	72.35	18.56	75.16	12.88	74.82	13.48	75.95	15.40	0.40
2	1A1X1	72.29	13.80	74.46	16.91	73.40	13.69	71.31	15.28	76.93	13.82	0.46
3	1A2X1	77.66	12.69	75.56	17.58	77.25	13.56	77.59	12.91	79.08	13.70	0.49
4	1A3X1	79.83	12.86	78.44	15.98	80.13	12.47	78.96	14.14	84.98	8.53	0.69
5	1A8X1	74.70	14.94	87.88	10.87	90.80	7.82	90.82	7.20	89.76	8.32	0.47
6	1A8X2	90.94	6.96	82.93	11.66	84.64	9.61	85.87	7.85	85.38	9.90	0.72
7	1A9X1	85.70	8.28	76.88	16.60	80.53	12.72	81.94	11.27	79.53	15.42	0.40
8	1C0X2	53.27	14.58	41.94	19.20	59.56	12.88	48.63	17.58	50.43	18.97	0.51
9	1C1X1	80.02	11.24	77.54	13.08	79.43	12.16	80.02	11.68	80.63	12.03	0.55
10	1C2X1	76.64	14.38	76.95	16.36	76.82	15.37	76.50	15.07	78.91	14.60	0.24
11	1C3X1	72.55	14.92	64.56	20.28	74.21	14.69	72.43	15.11	70.26	17.99	0.46
12	1C4X1	72.99	14.16	73.42	16.99	73.04	14.52	72.96	14.57	75.68	14.26	0.55
13	1C5X1	72.53	12.69	65.79	18.62	73.37	13.29	72.35	13.07	71.39	16.26	0.53
14	1C6X1	75.43	15.80	70.09	20.74	76.22	14.36	73.96	17.16	79.25	12.53	0.36
15	1C7X1	69.94	13.51	63.22	17.19	70.28	14.05	69.11	13.91	67.31	16.01	0.39
16	1C8X1	78.50	10.00	76.42	15.81	80.06	11.53	78.53	13.62	83.47	9.44	0.72
17	1C8X2	79.00	10.00	71.27	17.34	78.55	11.21	74.61	15.09	82.79	9.06	0.64
18	1N0X1	79.19	12.73	73.35	18.50	79.33	13.26	78.43	13.55	77.58	15.66	0.53
19	1N1X1	82.62	10.38	78.25	15.45	82.26	11.30	82.56	10.28	81.67	12.67	0.56
20	1N2X1	84.64	8.53	79.18	14.00	84.01	9.96	84.79	8.01	83.23	11.37	0.53

Figure 9. Screenshot of Talent Profiles Spreadsheet

Talent profiles can be specified in multiple ways. First, the profiles can be keyed to one or more criteria (e.g., technical training performance, first-term performance, continuance-attrition behavior). Second, different thresholds for defining success on one or more selected criteria can be specified (e.g., graduation from AFSC-awarding course, graduation from technical training pipeline, AFSC-qualifying and awarding courses, without an academic washback or washout). Third, the profiles can be estimated rationally or empirically or a combination of the two, depending on the data accessible.⁴ The talent profiles constructed for the prototype were keyed to a single criterion, graduation from the AFSC-awarding course, and estimated, empirically, on trainees who graduated from the course.

The corresponding validity coefficients are expected to match the specifications for defining the talent profiles. Like the profiles, the validity coefficients can be estimated rationally or empirically or by a combination of the two, depending on the available data.⁵ Validity coefficient estimates are population-level estimates (i.e., corrected for multivariate range restriction on the predictors, at a minimum). The validity coefficients for the prototype were keyed to the same criterion as the talent profiles, graduation from the AFSC-awarding course (where 1 = *graduated from course*, 0 = *washed out for academic reasons*). The coefficients were estimated,

⁴ An example of a combined rational-empirical estimation method is mean-based job component validity (JCV) (cf., Steel et al., 2006).

⁵ See coefficient-based JCV or a comparable synthetic validity method for examples of the latter (cf., Johnson et al., 2010; Peterson et al., 2001; Steel et al., 2009).

empirically, and corrected for multivariate range restriction in scores on the predictors, AFQT and MAGE composite scores, for illustrative purposes.⁶

3.6 Job Priority Index

Job Priority Index computes a Job Priority Index score for each job. Conceptually, the Job Priority Index score reflects the relative importance to the Air Force of filling open position(s) for each job. Figure 10 presents a screenshot of the *Job Priority Index* sheet.

		Prod Goal	Qual Rate	Train Lgth	Train Diff					
		25	25	25	25					
Job_No	AFSC	Production Goal	Projected Qualifying Rate	Tech School Length (in Days)	Tech School Difficulty	Prod Goal (Re-Scaled)	Proj Qual Rate (Re-Scaled)	Tech School Length (Re-Scaled)	Tech School Diff (Re-Scaled)	Job Priority Index
	MIN	2	13.5%	23	51.4					
	MAX	6,575	99.9%	967	93.4					
	MEAN	284	68.9%	98	72.0					
1	1A0X1	174	71.4%	23	75.5	2.65	33.04	2.28	71.31	27.32
2	1A1X1	29	67.7%	180	72.3	0.44	37.31	18.53	66.19	30.62
3	1A2X1	520	67.7%	29	77.7	7.91	37.31	2.90	74.84	30.74
4	1A3X1	475	50.1%	33	79.8	7.22	57.61	3.31	78.21	36.59
5	1A8X1	549	42.5%	342	90.9	8.35	66.50	35.30	95.99	51.54
6	1A8X2	38	42.5%	66	85.7	0.58	66.50	6.73	87.66	40.37
7	1A9X1	8	51.8%	41	80.0	0.12	55.70	4.14	78.53	34.62
8	1C0X2	61	97.2%	26	53.3	0.93	3.23	2.59	35.74	10.62
9	1C1X1	1,297	41.0%	72	80.0	19.73	68.17	7.35	78.53	43.44
10	1C2X1	540	58.1%	652	76.6	8.21	48.37	67.39	73.08	49.26
11	1C3X1	186	48.6%	31	72.6	2.83	59.37	3.11	66.67	32.99
12	1C4X1	396	81.8%	102	73.0	6.02	21.06	10.46	67.31	26.21
13	1C5X1	192	71.4%	30	72.5	2.92	33.04	3.00	66.51	26.37
14	1C6X1	158	50.1%	75	75.4	2.40	57.61	7.66	71.15	34.71
15	1C7X1	91	74.4%	30	69.9	1.38	29.60	3.00	62.34	24.08

Figure 10. Screenshot of Job Priority Index Spreadsheet

As shown in Figure 10, for each job the Job Priority score is computed from: (a) production goal (adjusted for the observed or projected technical school washout rate); (b) projected qualifying rate; (c) technical school length (in days); and (d) technical school difficulty.

⁶ Validity coefficients were multiple *Rs*, estimated from an optimally-weighted regression of AFQT and MAGE composite scores on academic washout status from the AFSC-awarding course and corrected for multivariate range restriction in AFQT/MAGE scores to an enlisted accessions population (Lawley, 1943).

Table 3. Description of the Factors Comprising the Job Priority Index Score

<i>Factor</i>	<i>Description</i>
Production Goal	<p>Targeted number of open positions to fill for each job to meet mission, adjusted for the projected (or observed) washout rate from the technical school pipeline, AFSC-qualifying and awarding course(s):</p> $n \text{ of open positions to fill for job}_i + n \text{ of trainees projected to washout from technical school pipeline for job}_i$ <p>The targeted number of open positions to fill could be for the year, quarter, or monthly. Similarly, the target could be for the Air Force overall or by Recruiting Squadron. The technical school washout rate could be a projection (forecast) or based on the rate(s) observed in past data. The Production Goals by job shown in the prototype are for the year and the Air Force, overall. The goals by job are notional and assume an Air Force-wide, overall recruiting goal of 30,000 enlisted accessions.</p>
Projected Qualifying Rate	<p>Percentage (%) of enlisted applicants (or accessions) projected to qualify for each job, based on current operational standards (aptitude and non-aptitude):</p> $n \text{ of enlisted applicants (or accessions) qualified for job}_i / N \text{ of enlisted applicants (or accessions), total}$ <p>The projected qualifying rate is a measure of the difficulty of filling open positions to the job. The projected qualifying rate could be based on the rates observed in past data, or, a forecast of the enlisted applicant (or accession) population. Like the Production Goal (above), the projected rate could be for the year, quarter, or monthly. Similarly, the projected rate could be for the Air Force overall or by Recruiting Squadron. The latter reflects a refined projected rate based on the enlisted applicant pool serviced by the Recruiting Squadron. The projected qualifying rates by job shown in the prototype are for the year and the Air Force, overall. The rates reflect observed rates, computed from past data on enlisted accessions.</p>
Technical School Pipeline Length (in Days)	<p>Length of technical school pipeline for each job, AFSC-qualifying and awarding course(s), in days:</p> $n \text{ of days of programmed instruction in technical school for job}_i$ <p>Technical school pipeline length is intended to be a measure of the resource costs of the training, where the longer the technical training pipeline, the greater the resource costs to the Air Force.</p>
Technical School Difficulty	<p>Technical school difficulty is measured by the mean (average) AFQT score of trainees that graduated from the AFSC-awarding course for each job:</p> $M_{AFQT} \text{ score of trainees who graduated from AFSC-awarding course for job}_i$ <p>The mean AFQT scores by job reflected in the prototype were computed from past data on enlisted accessions.</p>

Specifically, the Job Priority score for each job is computed as follows:

- (1) First, the specified values on the above four factors are re-scaled to a 0-100 metric, where values closer to 100 reflect greater importance to the Air Force.⁷
- (2) Next, the Job Priority score is computed as a weighted average of the re-scaled values on the above four factors for each job, like so:

$$[(w_1 * \text{Prod Goal}_{\text{Jobi}}) + (w_2 * \text{Qual Rate}_{\text{Jobi}}) + (w_3 * \text{Train Lgth}_{\text{Jobi}}) + (w_4 * \text{Train Diff}_{\text{Jobi}})] / 100$$

where w_x represents the weight assigned to each factor. The weight assigned to each factor is specified near the top of the sheet, as highlighted in Figure 11. The assigned weights are fixed for all jobs. The only constraint is that the weights must total to 100. Accordingly, the resulting Job Priority score is scaled on a 0-100 metric and reflects the relative importance to the Air Force of filling open positions to the job.

		Prod Goal	Qual Rate	Train Lgth	Train Diff					
		25	25	25	25					
Job_No	AFSC	Production Goal	Projected Qualifying Rate	Tech School Length (in Days)	Tech School Difficulty	Prod Goal (Re-Scaled)	Proj Qual Rate (Re-Scaled)	Tech School Length (Re-Scaled)	Tech School Diff (Re-Scaled)	Job Priority Index
	MIN	2	13.5%	23	51.4					
	MAX	6,575	99.9%	967	93.4					
	MEAN	284	68.9%	98	72.0					
1	1A0X1	174	71.4%	23	75.5	2.65	33.04	2.28	71.31	27.32
2	1A1X1	29	67.7%	180	72.3	0.44	37.31	18.53	66.19	30.62
3	1A2X1	520	67.7%	29	77.7	7.91	37.31	2.90	74.84	30.74
4	1A3X1	475	50.1%	33	79.8	7.22	57.61	3.31	78.21	36.59
5	1A8X1	549	42.5%	342	90.9	8.35	66.50	35.30	95.99	51.54
6	1A8X2	38	42.5%	66	85.7	0.58	66.50	6.73	87.66	40.37
7	1A9X1	8	51.8%	41	80.0	0.12	55.70	4.14	78.53	34.62
8	1C0X2	61	97.2%	26	53.3	0.93	3.23	2.59	35.74	10.62
9	1C1X1	1,297	41.0%	72	80.0	19.73	68.17	7.35	78.53	43.44
10	1C2X1	540	58.1%	652	76.6	8.21	48.37	67.39	73.08	49.26
11	1C3X1	186	48.6%	31	72.6	2.83	59.37	3.11	66.67	32.99
12	1C4X1	396	81.8%	102	73.0	6.02	21.06	10.46	67.31	26.21
13	1C5X1	192	71.4%	30	72.5	2.92	33.04	3.00	66.51	26.37
14	1C6X1	158	50.1%	75	75.4	2.40	57.61	7.66	71.15	34.71
15	1C7X1	91	74.4%	30	69.9	1.38	29.60	3.00	62.34	24.08

Figure 11. Screenshot of Job Priority Index Spreadsheet, Highlighting Where the Weights are Specified for Computing the Job Priority Score

⁷ Note, on the Projected Qualifying Rate, the inverse of the specified rate is re-scaled to a 0-100 metric. This way jobs with lower rates are assigned greater importance on the re-scaled metric.

3.7 P-J Match Index

P-J Match Index computes a Person-Job (P-J) Match Index score for each job. Conceptually, the P-J Match Index score reflects the fit from matching the person to the KSAO profile of the talent pool successful in each job. Figure 12 shows a screenshot of the P-J Match Index sheet.

		AFQT	M	A	G	E			
		65	65	65	65	65			
							Congruence Score (Prof_Diff Re-Scaled)		P-J Match Index
Job_No	AFSC	AFQT_Diff	M_Diff	A_Diff	G_Diff	E_Diff	Prof_Diff	Re-Scaled)	
	MIN	0.002	0.001	0.003	0.000	0.001	0.062	0.000	0.00
	MAX	6.543	8.600	5.123	6.333	7.882	6.314	0.613	65.93
1	1A0X1	0.826	0.396	0.788	0.728	0.711	0.690	0.262	28.17
2	1A1X1	0.528	0.559	0.613	0.413	0.863	0.595	0.323	34.74
3	1A2X1	0.997	0.601	0.903	0.975	1.028	0.901	0.269	28.96
4	1A3X1	1.153	0.841	1.214	0.987	2.344	1.308	0.239	25.68
5	1A8X1	0.649	2.105	3.301	3.588	2.974	2.523	0.000	0.00
6	1A8X2	3.729	1.538	2.043	2.660	2.059	2.406	0.000	0.00
7	1A9X1	2.500	0.716	1.221	1.503	0.942	1.376	0.125	13.41
8	1C0X2	0.804	1.201	0.422	0.931	0.768	0.825	0.300	32.21
9	1C1X1	1.336	0.959	1.186	1.286	1.300	1.213	0.216	23.26
10	1C2X1	0.809	0.730	0.769	0.763	0.952	0.805	0.143	15.42
11	1C3X1	0.506	0.022	0.627	0.492	0.293	0.388	0.371	39.87
12	1C4X1	0.564	0.495	0.554	0.547	0.749	0.582	0.390	41.93
13	1C5X1	0.593	0.042	0.630	0.562	0.393	0.444	0.412	44.34
14	1C6X1	0.660	0.245	0.781	0.522	1.137	0.669	0.240	25.76
15	1C7X1	0.366	0.103	0.376	0.295	0.144	0.257	0.340	36.55
16	1C8X1	1.350	0.722	1.306	0.994	1.956	1.266	0.264	28.43
17	1C8X2	1.400	0.362	1.209	0.637	1.963	1.114	0.283	30.48
18	1N0X1	1.115	0.451	1.081	0.992	0.803	0.888	0.295	31.68
19	1N1X1	1.698	0.857	1.528	1.708	1.316	1.421	0.162	17.43
20	1N2X1	2.304	1.013	1.909	2.472	1.604	1.860	0.037	3.98

Figure 12. Screenshot of P-J Match Index Spreadsheet

The P-J Match score is computed from: (a) congruence score(s) between the person's scores on a predictor test(s) (or measure) and the corresponding KSAO profile(s) of job-specific talent pools (aptitude, non-aptitude) (from the *Talent Profiles* spreadsheet); and (b) the corresponding validity coefficient(s) for the same predictor test(s) (also, from the *Talent Profiles* spreadsheet).

Specifically, the P-J Match score for each job is computed as follows:

- (1) First, the pairwise absolute standardized score differences (Cohen's d) are computed between the person's score(s) on a predictor test (or measure) and the corresponding KSAO profile for the predictor set for each job, like so,

$$|D|_{(Score\ X-KSAO\ Profile)} \text{ for job}_i = |(Score_X - M_{KSAO\ Profile})| / SD_{KSAO\ Profile}$$

- (2) Second, the average absolute standardized differences for the predictor set is computed:

$$\text{Average } |D| \text{ for job}_i = \sum [D_{(Score\ X-KSAO\ Profile)}] / n \text{ of Score}_X \text{ in Predictor Set}$$

The resulting average absolute standardized difference(s) represent preliminary congruence score(s) between the person's score profile and the corresponding KSAO profile of the talent pool for each job, scaled in standard deviation units, where higher scores indicate less fit with the job's KSAO profile.

- (3) Third, the preliminary congruence score(s) by job from the previous step are re-scaled, so, that higher scores now indicate greater fit with the job's KSAO talent profile and are then weighted by the corresponding validity coefficient. Preliminary congruence scores greater than or equal to 2 (the person's score profile differs 2 SD s or greater, on average, from the KSAO profile) are set to 0.

$$\text{Congruence Score} = 0, \text{ if Average } |D| \text{ for job}_i \geq 2,$$

$$\text{else } [(2 - \text{Average } |D| \text{ for job}_i) / 2] * r \text{ for job}_i$$

- (4) Fourth, the final congruence scores from the previous step are re-scaled to a 0-100 metric, to be consistent with the Job Priority Index. The resulting P-J Match scores indicate the person's fit with the KSAO talent profile for each job, where higher scores mean greater fit with the job's talent profile.

3.8 Projected Payoff

Projected Payoff computes the projected payoff score for each job the person qualifies for and then ranks the jobs from highest to lowest on the payoff score. Figure 13 presents a screenshot of the *Projected Payoff* sheet. As shown in Figure 13, the *Projected Payoff* sheet lists the jobs and the person's corresponding qualification status (Y/N) (from the *Job Eligibility* sheet), Job Priority Index score, and the P-J Match Index score, for each job.

Rank	Job_No	Career Group	Aptitude Area	AFSC	Job Title	Qualified (Y/N)	Job Priority Index	P-J Match Index	Projected Payoff
0	1	Operations	General	1A0X1	In-Flight Refueling	No	27.32	28.17	0.00
0	2	Operations	General	1A1X1	Flight Engineer	No	30.62	34.74	0.00
0	3	Operations	General	1A2X1	Aircraft Loadmaster	No	30.74	28.96	0.00
0	4	Operations	Electronic	1A3X1	Airborne Mission Systems Operator	No	36.59	25.68	0.00
0	5	Operations	General	1A8X1	Airborne Cryptologic Language Analyst	No	51.54	0.00	0.00
0	6	Operations	General	1A8X2	Airborne ISR Operator	No	40.37	0.00	0.00
0	7	Operations	Mechanical or General	1A9X1	Special Missions Aviation	No	34.62	13.41	0.00
0	8	Operations	Administrative	1C0X2	Aviation Resource Management	No	10.62	32.21	0.00
0	9	Operations	Mechanical or General	1C1X1	Air Traffic Control	No	43.44	23.26	0.00
46	10	Operations	Mechanical or General	1C2X1	Combat Control	Yes	49.26	15.42	32.34
0	11	Operations	Administrative or General	1C3X1	Command Post	No	32.99	39.87	0.00
0	12	Operations	General	1C4X1	Tactical Air Control Party (TACP)	No	26.21	41.93	0.00
31	13	Operations	General	1C5X1	Command & Control Battle Management Ops	Yes	26.37	44.34	35.35
0	14	Operations	Electronic	1C6X1	Space Systems Operations	No	34.71	25.76	0.00
0	15	Operations	Mechanical or General	1C7X1	Airfield Management	No	24.08	36.55	0.00
0	16	Operations	Electronic	1C8X1	Ground Radar Systems	No	36.99	28.43	0.00
0	17	Operations	Electronic	1C8X2	Airfield Systems	No	37.62	30.48	0.00
45	18	Operations	General	1N0X1	Operations Intelligence	Yes	33.87	31.68	32.77
0	19	Operations	General	1N1X1	Geospatial Intelligence	No	38.73	17.43	0.00
0	20	Operations	General	1N2X1	Signals Intelligence Analyst	No	41.70	3.98	0.00
0	21	Operations	General	1N3X1	Cryptologic Language Analyst	No	53.19	0.00	0.00
0	22	Operations	General	1N4X1	Fusion Analyst	No	34.22	33.35	0.00
34	23	Operations	Mechanical	1P0X1	Aircrew Flight Equipment	Yes	19.43	50.81	35.12
59	24	Operations	General	1S0X1	Safety	Yes	25.78	22.95	24.37
44	25	Operations	General	1T2X1	Pararescue	Yes	38.50	27.62	33.06

Figure 13. Screenshot of Projected Payoff Spreadsheet

The Projected Payoff score is computed from: (a) the Job Priority score (from the *Job Priority Index* sheet); and (b) the P-J Match score (from the *P-J Match Index* sheet). Specifically, the projected payoff score is set to 0 if the person does not qualify for the job, as determined on the *Job Eligibility* sheet. On the jobs that a person qualifies for, the projected payoff score is the weighted average of the *Job Priority* and *P-J Match* scores. In sum,

$$\text{Projected Payoff} = 0, \text{ if Qualified (Y/N) = "No,"} \\ \text{else } [(w_1 * \text{Job Priority Index}_{\text{Jobi}}) + (w_2 * \text{P-J Match Index}_{\text{Jobi}})] / 100$$

where w_x represents the weight assigned to each constituent score. The weight assigned to each constituent score is specified near the top of the sheet, as highlighted in Figure 14. Consistent with the Job Priority Index, the assigned weights are fixed for all jobs. The only constraint is that the weights must total to 100.

			Job Priority	PJM	
			50	50	
AFSC	Job Title	Qualified (Y/N)	Job Priority Index	P-J Match Index	Projected Payoff
1A0X1	In-Flight Refueling	Yes	27.32	28.17	27.75
1A1X1	Flight Engineer	Yes	30.62	34.74	32.68
1A2X1	Aircraft Loadmaster	Yes	30.74	28.96	29.85
1A3X1	Airborne Mission Systems Operator	No	36.59	25.68	0.00
1A8X1	Airborne Cryptologic Language Analyst	No	51.54	0.00	0.00
1A8X2	Airborne ISR Operator	No	40.37	0.00	0.00
1A9X1	Special Missions Aviation	Yes	34.62	13.41	24.02
1C0X2	Aviation Resource Management	Yes	10.62	32.21	21.41
1C1X1	Air Traffic Control	No	43.44	23.26	0.00
1C2X1	Combat Control	Yes	49.26	15.42	32.34
1C3X1	Command Post	No	32.99	39.87	0.00
1C4X1	Tactical Air Control Party (TACP)	Yes	26.21	41.93	34.07
1C5X1	Command & Control Battle Management Ops	Yes	26.37	44.34	35.35
1C6X1	Space Systems Operations	No	34.71	25.76	0.00
1C7X1	Airfield Management	Yes	24.08	36.55	30.32
1C8X1	Ground Radar Systems	No	36.99	28.43	0.00
1C8X2	Airfield Systems	No	37.62	30.48	0.00
1N0X1	Operations Intelligence	Yes	33.87	31.68	32.77
1N1X1	Geospatial Intelligence	No	38.73	17.43	0.00
1N2X1	Signals Intelligence Analyst	No	41.70	3.98	0.00

Figure 14. Screenshot of Projected Payoff Spreadsheet, Highlighting Where the Weights are Specified for Computing the Projected Payoff Score

The jobs are ranked from 1 to k , based on their projected payoff score, from highest to lowest. The resulting ranking of jobs is displayed in the *P-J Matches* sheet (Figure 3), accordingly.

4.0 PLANS FOR YEAR 2

The current effort was planned as a two-year (24 month) development effort. The primary objective of Year One was to develop and evaluate a prototype enlisted person-job matching tool (algorithms and software). The primary objective of Year Two is to refine the tool and build-in selected dynamic modeling feature(s).

Specifically, Year Two will consist of the proposed activities:

- (1) Update the Job Priority and Person-Job Match indices with more recent and complete data, to include non-apitude requirements, where feasible (e.g., TAPAS, AF-WIN). Refine and extend the corresponding algorithms on the Job Priority and Person-Job Match indices, accordingly.
- (2) Build in and test an applicant supply feature that factors in estimates of the proportion (or number) of applicants with a comparable talent profile to the applicant (or trainee) into the projected payoff algorithm and recommended person-job matches.
- (3) Build in and test selected dynamic modeling feature(s), specifically, features that incorporate time varying or other dynamic macro-level factors (e.g., changes to Production Goals from enlistment contracts activity, changes in applicant supply projections).

5.0 REFERENCES

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