<u>Implementation of *Annie™ MOORE* at HIAS</u>

February 20, 2020

Organisation for Economic Co-operation and Development
2, rue André Pascal
75016 Paris
France

Dear OECD Innovation Review Committee:

HIAS has been resettling refugees since the 1880s. Since 2015, I have been convinced that matching algorithms have the potential to improve the placement of resettled refugees in communities where they would contribute to the local economy and thrive. Around that time, I had a conversation with Alvin Roth, who had won a Nobel Economics Prize for his work on matching in 2012 and had written about refugee matching on his popular blog[1]. Professor Roth introduced us to an international team of experts with whom HIAS subsequently formed a partnership to develop *Annie™ MOORE.*

Since late 2017, with support from two foundations[2,3], the research team began building our *Annie™ MOORE* (Matching and Outcome Optimization for Refugee Empowerment) software for HIAS. We named our software after Annie Moore, who was the first recorded immigrant to Ellis Island in New York. The software was designed almost entirely by Narges Ahani, a Data Science PhD student at Worcester Polytechnic Institute (WPI).

Throughout the course of the software's design, the team has been in regular contact with Karen Monken, our Director for Pre-Arrival and Initial Resettlement. Not long after our Memorandum of Understanding was signed and approved by the US Department of State, the first version of the software was launched, in May 2018. Since then, the team has been working closely with Karen to improve the software further, adding dozens of design improvements. In August 2018, the software was rolled out internally to all HIAS staff to a great reception. It was subsequently presented to key stakeholders at the US Department of State.

Perhaps communicating *Annie™*'s impact through comments from Karen Monken will convey its profound effects at HIAS, where we are constantly operating in an environment with extremely limited resources. According to Karen Monken, "The effectiveness of my operations has increased dramatically. I now spend 80% percent less time on routine matching, and can focus my time and energy on the more difficult cases such as those with significant medical conditions, ensuring that their placement is as good

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[1] https://marketdesigner.blogspot.com/2015/09/refugee-resettlement-long-term-policy.html
[2] The Jan Wallander and Tom Hedelius Foundation
[3] The Ragnar Söderberg Foundation

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as possible." The software has enormous potential not only for HIAS, but also for every resettlement agency in the United States. It continues to be showcased by HIAS and we are getting interest from another Resettlement Agency for adoption.

In 2019, due to changes in US policy, refugee arrivals were very low and the potential of *Annie™* has yet to be fully realized, so our ability to measure its effectiveness clinically has temporarily been hampered. This is a priority for us as soon as the refugee numbers increase. Even so, the team has been able to complete significant back-testing, which indicates that we could have increased employment outcomes for our refugees by over 20 percent and dramatically improved the quality of matches if we had *Annie™* in 2018. Further, *Annie™* has already had a dramatic impact on our pre-arrival procedures. Karen Monken has been able to spend a lot more time on difficult-to-match cases, while spending a lot less time on simpler cases. The arrival process has become more efficient and streamlined and it is informed by data.

HIAS sees a lot of potential in *Annie™*'s utilization outside of the initial scope of refugee resettlement in the United States. HIAS is an international humanitarian organization with operations in 16 countries. Utilizing *Annie™* for a variety of placement decisions seems within our reach. *Annie™* has potential applications in many areas currently of concern including the ongoing asylum crisis at the Southern border of the United States. With our strong donor and affiliate support throughout the United States, we have capacity to host asylum seekers that are awaiting their judicial hearings, and see *Annie™* having great potential in this context. There are additional applications internationally. Alex Teytelboym of Oxford University is considering adapting *Annie™* for refugee matching in the United Kingdom, while Tommy Andersson and Alessandro Martinello at Lund University have been investigating the potential of using *Annie™* in Sweden.

Beyond these practical applications, it is clear that refugee matching is very important in academia. I understand that Andrew Trapp has secured a grant from the National Science Foundation to continue investigating matching problems in refugee resettlement through 2021, which offers critical support for the sustained development of *Annie™*. Moreover, Alex Teytelboym has also been awarded a large three-year grant from the Economic and Social Research Council in the UK (in part) for his excellent work on refugee resettlement. As such, we look forward to continued collaboration with the team in moving forward these important frontiers.

Please feel free to contact me if you need more information, or wish to discuss anything further.

Sincerely Yours,

Mark Hetfield
President & CEO

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