### Supplementary Table 1: Stiffness Data (Nm/rad)

| Subject | 20% Stiffness Target | Mean | Std. | 40% Stiffness Target | Mean | Std. | 60% Stiffness Target | Mean | Std. |
|---------|----------------------|------|------|----------------------|------|------|----------------------|------|------|
| 1       | 35.3                 | 40.5 | 7.6  | 47.7                 | 48.5 | 4.37 | 60.1                 | 60.0 | 6.3  |
| 2       | 30.5                 | 26.8 | 3.0  | 44.1                 | 44.4 | 13.25| 57.7                 | 48.4 | 11.4 |
| 3       | 30.3                 | 21.5 | 8.0  | 44.0                 | 32.0 | 20.04| 57.6                 | 35.7 | 16.8 |
| 4       | 39.4                 | 39.3 | 5.8  | 50.8                 | 52.0 | 12.22| 62.2                 | 59.2 | 8.5  |
| 5       | 34.9                 | 45.1 | 11.5 | 47.4                 | 60.5 | 16.57| 60.0                 | 55.4 | 15.5 |
| 6       | 28.2                 | 31.7 | 9.4  | 42.4                 | 45.9 | 15.22| 56.6                 | 52.3 | 8.3  |
| 7       | 30.7                 | 30.0 | 4.0  | 44.3                 | 41.1 | 5.87 | 57.9                 | 51.4 | 7.0  |
| 8       | 27.4                 | 27.8 | 4.2  | 41.8                 | 40.6 | 7.45 | 56.2                 | 58.6 | 9.0  |
| 9       | 26.0                 | 26.3 | 4.0  | 40.8                 | 41.3 | 5.55 | 55.5                 | 51.4 | 8.0  |
| 10      | 28.9                 | 23.3 | 8.0  | 42.9                 | 23.6 | 14.1 | 56.9                 | 22.8 | 6.9  |
| 11      | 27.3                 | 29.5 | 9.0  | 41.8                 | 34.0 | 11.02| 56.2                 | 44.1 | 17.2 |
| 12      | 38.2                 | 38.9 | 6.9  | 49.9                 | 49.3 | 12.91| 61.6                 | 61.4 | 7.9  |
| 13      | 27.4                 | 31.3 | 4.2  | 41.8                 | 41.7 | 5.64 | 56.2                 | 54.0 | 6.3  |
| 14      | 44.5                 | 41.3 | 13.4 | 54.7                 | 51.0 | 11.82| 64.8                 | 66.9 | 10.0 |

### Supplementary Table 2: Torque Data (Nm)

| Subject | 20% Plantar Flexion MVC Target | Mean | Std. | 40% Plantar Flexion MVC Target | Mean | Std. | 20% Dorsiflexion MVC Target | Mean | Std. |
|---------|---------------------------------|------|------|--------------------------------|------|------|-----------------------------|------|------|
| 1       | -12.9                           | -14.0| 1.5  | -25.8                          | -26.7| 2.2  | 10.8                        | 14.9 | 6.1  |
| 2       | -12.5                           | -15.2| 2.1  | -24.9                          | -20.4| 1.4  | 11.5                        | 13.5 | 1.9  |
| 3       | -4.6                            | -8.0 | 2.1  | -9.1                           | -11.0| 1.5  | 4.2                         | 6.3  | 0.7  |
| 4       | -7.0                            | -9.3 | 1.2  | -14.1                          | -14.6| 2.2  | 6.7                         | 5.8  | 0.9  |
| 5       | -15.4                           | -16.8| 1.8  | -30.7                          | -28.2| 3.2  | 9.5                         | 13.8 | 1.7  |
| 6       | -11.1                           | -11.8| 1.9  | -22.2                          | -21.2| 3.2  | 5.7                         | 5.6  | 0.7  |
| 7       | -7.8                            | -6.5 | 1.2  | -15.5                          | -15.8| 1.6  | 10.2                        | 10.3 | 1.9  |
| 8       | -5.3                            | -7.3 | 0.7  | -10.6                          | -11.7| 1.1  | 6.7                         | 10.2 | 5.2  |
| 9       | -6.7                            | -5.4 | 1.1  | -13.4                          | -13.1| 0.7  | 4.9                         | 5.7  | 1.3  |
| 10      | -8.2                            | -7.9 | 1.2  | -16.5                          | -11.2| 1.8  | 6.6                         | 5.2  | 1.6  |
| 11      | -9.0                            | -9.7 | 1.7  | -17.9                          | -19.8| 3.8  | 6.4                         | 7.1  | 2.1  |
| 12      | -10.5                           | -10.8| 1.2  | -21.0                          | -21.1| 2.5  | 10.2                        | 10.7 | 0.8  |
| 13      | -4.4                            | -6.0 | 0.9  | -8.9                           | -10.5| 1.0  | 4.0                         | 6.1  | 1.6  |
| 14      | -10.1                           | -12.7| 2.7  | -20.3                          | -18.2| 3.6  | 8.5                         | 8.5  | 1.2  |
### Supplementary Table 3: Position Data (deg)

| Subject | 20% Stiffness Target | Mean | Std. | 40% Stiffness Target | Mean | Std. | 60% Stiffness Target | Mean | Std. |
|---------|----------------------|------|------|----------------------|------|------|----------------------|------|------|
| 1       | 22.0                 | 29.3 | 4.0  | 43.9                 | 44.2 | 9.7  | 65.6                 | 62.9 | 18.4 |
| 2       | 26.4                 | 26.8 | 9.2  | 37.7                 | 37.8 | 9.7  | 48.9                 | 50.9 | 7.4  |
| 3       | 35.4                 | 38.7 | 6.1  | 56.2                 | 58.2 | 7.7  | 77.0                 | 82.5 | 16.3 |
| 4       | 40.2                 | 50.1 | 10.2 | 54.2                 | 56.0 | 7.2  | 68.2                 | 67.4 | 12.3 |
| 5       | 44.5                 | 61.3 | 19.7 | 63.1                 | 72.0 | 12.7 | 81.7                 | 82.8 | 7.7  |
| 6       | 46.7                 | 46.6 | 8.9  | 64.5                 | 60.2 | 8.6  | 82.2                 | 76.9 | 14.8 |
| 7       | 28.5                 | 35.7 | 19.0 | 42.7                 | 45.4 | 13.3 | 56.9                 | 62.6 | 13.2 |
| 8       | 13.4                 | 21.0 | 5.8  | 16.1                 | 20.2 | 24.7 | 18.7                 | 45.1 | 10.1 |
| 9       | 24.8                 | 21.0 | 7.2  | 35.4                 | 43.6 | 22.9 | 46.1                 | 51.7 | 18.8 |

### Supplementary Table 4: Pilot Stiffness Data (Nm/rad)

| Subject | 20% Plantar Flexion MVC Target | Mean | Std. | 40% Plantar Flexion MVC Target | Mean | Std. | 20% Dorsiflexion MVC Target | Mean | Std. |
|---------|--------------------------------|------|------|--------------------------------|------|------|------------------------------|------|------|
| 1       | -26.2                          | -23.8| 1.4  | -52.4                          | -46.7| 3.0  | 8.4                          | 8.5  | 3.1  |
| 2       | -21.4                          | -20.3| 2.4  | -42.8                          | -40.5| 5.6  | 5.0                          | 5.9  | 1.1  |
| 3       | -21.4                          | -19.6| 4.3  | -42.8                          | -40.4| 5.6  | 5.0                          | 5.5  | 0.7  |
| 4       | -26.2                          | -26.2| 2.3  | -52.4                          | -47.6| 9.0  | 8.4                          | 9.7  | 2.7  |
| 5       | -26.2                          | -25.1| 3.5  | -52.4                          | -48.9| 4.6  | 8.4                          | 8.9  | 0.7  |
| 6       | -26.2                          | -28.1| 5.8  | -52.4                          | -42.0| 16.0 | 8.4                          | 10.8 | 3.3  |
| 7       | -21.4                          | -19.8| 1.6  | -42.8                          | -38.4| 5.4  | 5.0                          | 6.1  | 1.5  |
| 8       | -21.4                          | -21.1| 2.5  | -42.8                          | -22.7| 2.0  | 5.0                          | 5.0  | 1.5  |
| 9       | -26.2                          | -27.7| 2.9  | -52.4                          | -49.5| 7.8  | 8.4                          | 10.9 | 3.1  |

### Supplementary Table 5: Pilot Torque Data (Nm)


| Subject | 20% Plantar Flexion Excursion Angle Target | Mean | Std. | 40% Plantar Flexion Excursion Angle Target | Mean | Std. | 20% Dorsiflexion Excursion Angle Target | Mean | Std. |
|---------|------------------------------------------|------|------|-------------------------------------------|------|------|----------------------------------------|------|------|
| 1       | -4.2                                     | -4.2 | 0.7  | -10.4                                     | -10.0| 2.3  | 4.8                                    | 5.1  | 1.5 |
| 2       | -4.2                                     | -4.4 | 1.0  | -10.4                                     | -9.8 | 1.0  | 4.8                                    | 4.3  | 1.1 |
| 3       | -4.2                                     | -4.3 | 1.7  | -10.4                                     | -10.0| 1.7  | 4.8                                    | 5.5  | 1.4 |
| 4       | -4.3                                     | -4.4 | 0.9  | -10.4                                     | -10.9| 1.5  | 5.7                                    | 5.1  | 1.3 |
| 5       | -4.4                                     | -4.5 | 0.8  | -10.8                                     | -10.4| 1.0  | 5.7                                    | 5.1  | 1.1 |
| 6       | -4.4                                     | -4.6 | 1.1  | -10.8                                     | -11.5| 1.1  | 5.7                                    | 5.4  | 0.8 |
| 7       | -4.4                                     | -4.5 | 1.6  | -10.8                                     | -10.7| 2.2  | 5.6                                    | 5.4  | 0.7 |
| 8       | -4.4                                     | -4.5 | 1.5  | -10.7                                     | -10.6| 0.9  | 5.7                                    | 4.8  | 2.4 |
| 9       | -4.4                                     | -4.9 | 0.5  | -10.8                                     | -10.4| 2.3  | 5.7                                    | 5.6  | 1.5 |

Supplementary Table 6: Pilot Position Data (deg)