

ISO 9787:2013-05 (E)

Robots and robotic devices - Coordinate systems and motion nomenclatures

| Contents | | Page |
|---|---|-------------|
| Foreword | | iv |
| Introduction | | v |
| 1 | Scope | 1 |
| 2 | Normative references | 1 |
| 3 | Terms and definitions | 1 |
| 4 | General rules for coordinate systems and motion nomenclature | 3 |
| 4.1 | Right-hand coordinate systems | 3 |
| 4.2 | Translations | 3 |
| 4.3 | Rotations | 3 |
| 4.4 | Nomenclature for manipulator axes | 4 |
| 5 | Coordinate systems | 4 |
| 5.1 | World coordinate system, $O_0 - X_0 - Y_0 - Z_0$ | 4 |
| 5.2 | Base coordinate system, $O_1 - X_1 - Y_1 - Z_1$ | 4 |
| 5.3 | Mechanical interface coordinate system, $O_m - X_m - Y_m - Z_m$ | 5 |
| 5.4 | Tool coordinate system (TCS), $O_t - X_t - Y_t - Z_t$ | 6 |
| 5.5 | Mobile platform coordinate system, $O_p - X_p - Y_p - Z_p$ | 7 |
| 5.6 | Task coordinate system, $O_k - X_k - Y_k - Z_k$ | 7 |
| 5.7 | Object coordinate system, $O_j - X_j - Y_j - Z_j$ | 8 |
| 5.8 | Camera coordinate system, $O_c - X_c - Y_c - Z_c$ | 8 |
| Annex A (informative) Examples of coordinate systems for different mechanical structures | | 9 |
| Bibliography | | 12 |