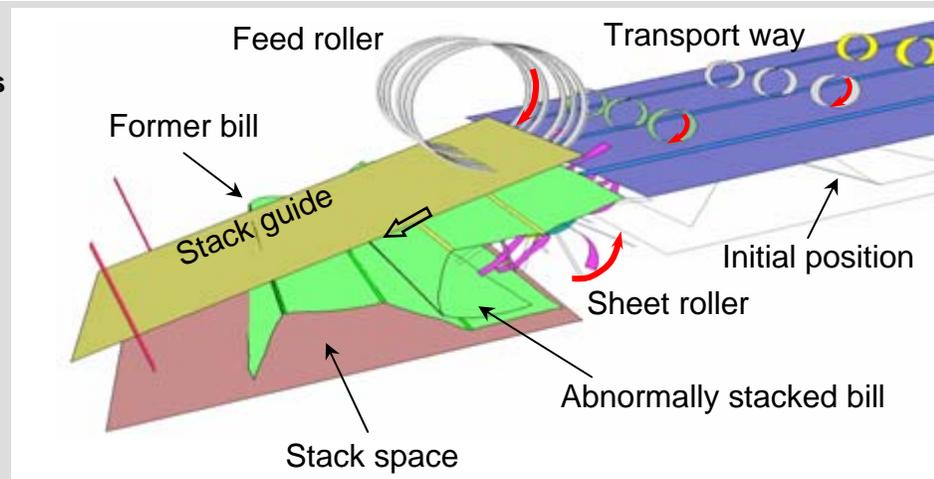


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## 3D simulation technology to reproduce movement of plural bills in ATMs

Applying the simulation technology to optimal mechanism designs

**Simulation sample of abnormalities that occurred because the front edge of bill turned down**



Hitachi, Ltd. has used numerical analysis to develop a 3D simulation technology to reproduce the movement of bills separated one by one or piled up inside an automatic teller machine (ATM). This simulation can evaluate friction and contact behavior between bills or between bills and parts of devices. Furthermore, it can make previously impossible predictions of complicated movements of more than two bills to be separated or folded bills to be stacked. Therefore, instead of costly prototype tests, the simulation technology may be effectively applied for designing separation and stacking mechanisms in ATMs. This technology contributes to shortening development periods and achieving high reliability.