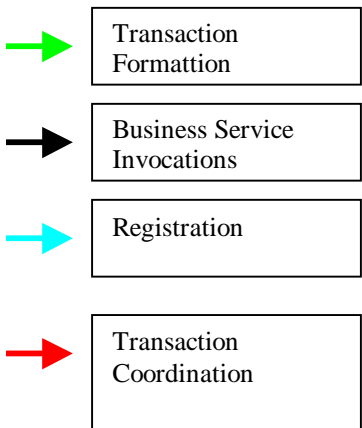
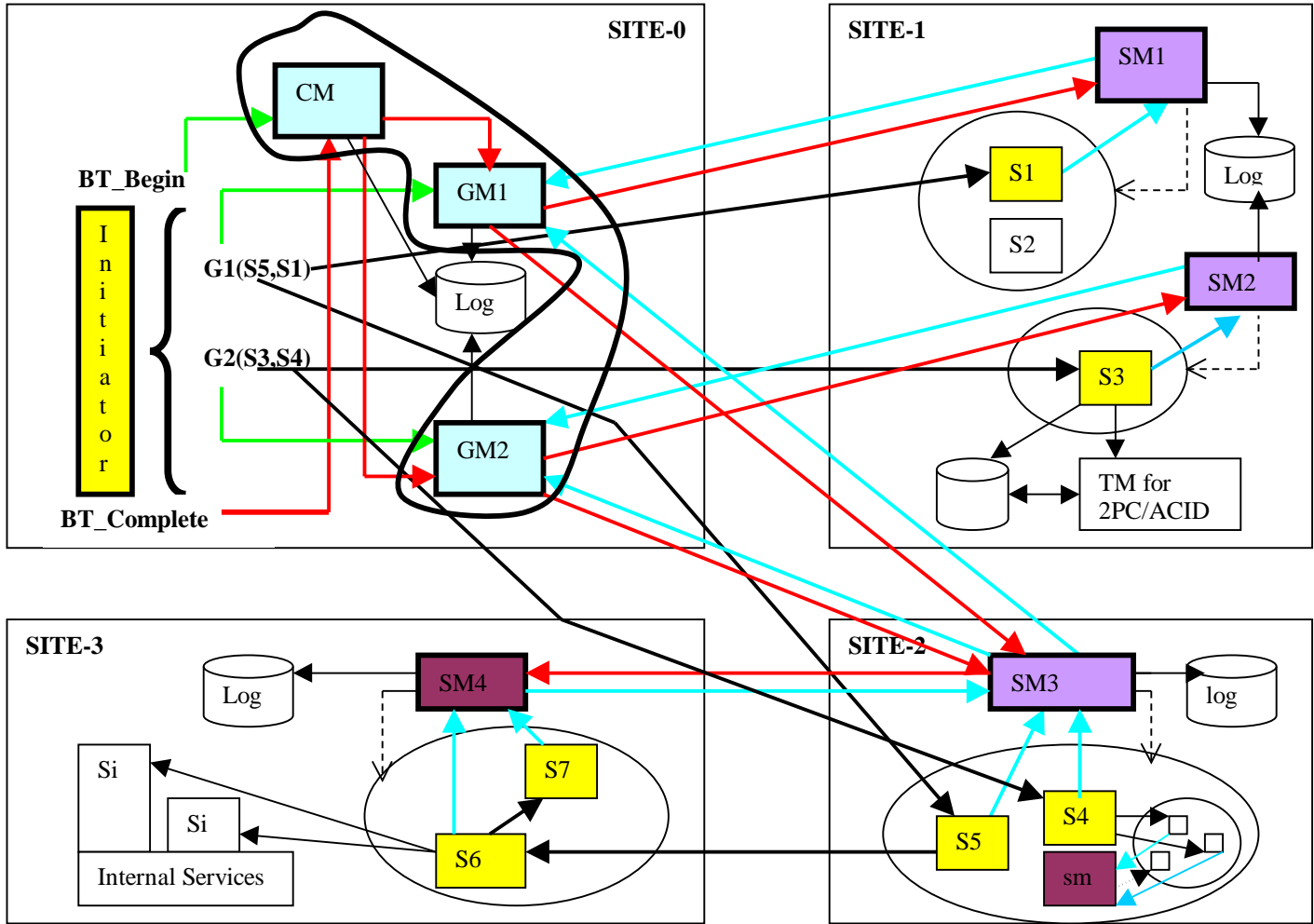


## BUSINESS TRANSACTION PROTOCOL and ACTORS (w/ Explicit Registration of Participants)



- 1- Initiator starts a transaction (Cohesion Manager, CM created)
  - 2- Initiator creates group of operations (Group Manager, Gms created – by CM)
  - 3- Initiator starts executing group of operations (Multiple Web Service [S] requested). Initiator know the URL of the requested service (its own URL sent in the message)
  - 4- Service that is part of the Cohesion informs its Service Manager (SM)
  - 5- Service Manager registers with transaction (with GM) as a branch manager.
- Note that 1) SM4 is a sub-transaction invisible to main transaction, 2) SM3 registers twice, once for GM1 and once for GM2.
- 6- Initiator signals the end of transaction (complete/undo to CM)
  - 7- CM asks for vote (GMs may already know the results or confirm with SMs)
- \* Note also the internal group at SITE-2, 2PC/ACID transaction at SITE-1, and internal service call SITE-3 are sub transactions which may have different contexts.

SMs may have both transaction manager and resource manager role (resources being the services). Note also that CM and GMs may be the same entity! **There are 5 different types of actors: Initiator, CM, GM, SM and S** where Service Managers are like RM (resource managers for a service group – for example they may check consistency of requests/and actions and may not allow if their internal consistency in danger – implementation details -).